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RESEARCH IN PROGRAMED INSTRUCTION IN SPANISH WITH SEVENTH-GRADE STUDENTS.

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REPORT NUMBER NDEA-VIIA-968-2

PUB DATE 29 JUN 64

REPORT NUMBER TM-895/103/00

GRANT OEG-7-14-0000-181

EDRS PRICE MF-\$0.18 HC-\$4.00 100P.

DESCRIPTORS- *PROGRAMED INSTRUCTION, *SPANISH, GRADE 7, *INDIVIDUAL STUDY, PROGRAM DESIGN, *LANGUAGE SKILLS, LEARNING DIFFICULTIES, LEARNING PROCESSES, INDIVIDUAL DIFFERENCES, PROGRAMED MATERIALS, TUTORING, *AUTOINSTRUCTIONAL AIDS, LANGUAGE INSTRUCTION, SANTA MONICA, CALIFORNIA

THE EMPHASIS IN THIS STUDY WAS ON EXPLORING MEANS OF MAKING PROGRAMS MORE RESPONSIVE TO INDIVIDUAL DIFFERENCES AMONG LEARNERS AND ON DEVELOPING RULES AND PROCEDURES FOR WRITING AND IMPROVING PROGRAMS. THE PROGRAMED COURSE IN BEGINNING SPANISH SELECTED FOR THE STUDY WAS DESIGNED FOR USE BY STUDENTS WITHOUT THE ASSISTANCE OF A TEACHER. IT ATTEMPTS TO TEACH SIMULTANEOUSLY THE FOUR BASIC LANGUAGE SKILLS--LISTENING COMPREHENSION, SPEAKING, READING, AND WRITING. A TOTAL OF APPROXIMATELY 90 SEVENTH-GRADE STUDENTS PARTICIPATED AS SUBJECTS IN THE STUDY. THE ORIGINAL PROGRAM WAS ADMINISTERED AND THEN REVISED INTO FOUR VERSIONS, EACH SUCCESSIVE VERSION INCORPORATING MODIFICATIONS SUGGESTED BY THE LEARNING BEHAVIOR OF THE STUDENTS. THE FINAL PROGRAM VERSION WAS DEVELOPED AFTER TUTORIAL SESSIONS WHICH WERE DEVOTED TO IMPROVING THE BRANCHING PROCEDURES AND THE REMEDIAL EXERCISES. CONCLUSIONS DRAWN FROM THIS STUDY INCLUDED--(1) PROGRAMS CAN AND SHOULD BE MADE MORE RESPONSIVE TO INDIVIDUAL DIFFERENCES IN LEARNERS, (2) THE TEACHER HAS AN IMPORTANT ROLE TO PLAY IN CONNECTION WITH THE USE OF PROGRAMED MATERIALS, (3) EXCESSIVE VARIABILITY IN REQUIRED RESPONSE BEHAVIOR FROM ITEM TO ITEM CAN INTERFERE WITH LEARNING, (4) FOR MOST SEVENTH-GRADE STUDENTS IN THE STUDY, SHORT AND FREQUENT INSTRUCTIONAL SESSIONS ARE BETTER THAN LONG ONES, AND (5) FREQUENT DIAGNOSTIC TESTING IMPROVES LEARNING. (WB)

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TECHNICAL MEMORANDUM

(TM Series)

The research reported herein was conducted under SDC's independent research program and a grant from the Office of Education, U. S. Department of Health, Education, and Welfare.

Research in Programmed Instruction
in Spanish with Seventh-Grade Students

Gerald Newmark

Title VII of P.L. 85-864
National Defense Education Act of 1958
Grant 7-14-0000-181
June 29, 1964

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ACKNOWLEDGEMENTS

The author is indebted to Nancy Echols, Ernest Garcia, and Patrick Herrera for assistance in carrying out much of the work connected with this project.

Appreciation is expressed to Dr. Drayton Marsh, Principal, Culver City Unified School District, and Mr. Joseph E. Day, Principal, Santa Monica Unified School District for their cooperation in providing seventh-grade students for the study and to Mr. Donald E. Krehbiel, Counselor and Social Studies teacher, Santa Monica Unified School District, for his work in selecting students for the final experimental comparison.

The author also wishes to thank Mr. William Adorno and Mr. Frederick Dominguez, Spanish teachers, Beverly Hills Unified School District, and Mr. Patrick Herrera, Spanish teacher, Santa Monica Unified School District, for serving as judges of the speaking tests in the final experimental comparison.

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INTRODUCTION

For the past two years, in a study partly supported by the United States Office of Education, System Development Corporation has been studying programmed instruction in four subject matter areas---reading and arithmetic at the first-grade level, geometry at the high-school level, and Spanish at the seventh-grade level. The emphasis in this study has been on exploring means of making programs more responsive to individual differences among learners and on developing rules and procedures for writing and improving programs. The study has also sought to determine what generalizations about programming could be applied across subject matter areas and age levels.

The following general procedures were used in all four subject matter areas. A linear program was administered to one student at a time. If he had difficulty in responding to any of the items in the program, he was interviewed immediately so that the cause of his difficulty could be determined. In an attempt to remedy the difficulty, the experimenter then tutored the student, using a variety of techniques. When the difficulty was resolved, the experimenter recorded the program sequence or techniques that seemed to be effective. The process of tutorial modifications continued until a sufficient number of changes warranted a major revision of the program. The revised program was then given to other students. Subsequent program revisions were made in the same manner. Formal experimental comparisons were made when there appeared to be a substantial difference between the latest revision and the original version of the program. If no significant difference was obtained, the revision process was continued. Empirical iterations were continued until differences were not only statistically significant, but also judged to be practically significant in favor of the revised program. The data which had been collected during the tutoring sessions and the student responses to the different versions of the program were then analyzed. The analysis resulted in generalizations concerning modifications that accounted for the improvement in the program.

This technique of using successive empirical iterations of intensive tutoring sessions to determine the branching structure and variations to the program differs markedly from current practice in program revision. More typically, remedial branches are inserted at reasonable junctures, and changes are made in the main stream of the program when there is evidence of excessive error rate; item changes are typically based on plausible notions of what should work, rather than on techniques which have actually been tried and do work.

OVERVIEW OF SEVENTH-GRADE STUDY IN SPANISH

A programmed course in beginning Spanish, published by a commercial company, was selected for the study. It was designed for use by students without the assistance of a teacher and attempts to teach simultaneously the four basic language skills: listening comprehension, speaking, reading, and writing. An examination of the material led the experimenter to conclude that it would be appropriate for seventh-grade students; other subject matter areas involved in the study were at the elementary and high-school levels, and part of the purpose of the study was to see if we could come up with findings that applied equally to different subject matter areas and grade levels.

Our choice was limited in selecting the initial program, since only a few programmed foreign-language courses were commercially available. We did not consider it significant, however, that the program selected had certain aspects which were counter to modern language-teaching opinion--e.g., the early introduction of reading and writing and the heavy use of translation from the native language to the target language and vice versa. Our interest was not in obtaining a program which used a particular approach in order to test that approach, but rather in seeing whether and how we could improve a program and make it more responsive to individual differences in learners. In the process, we hoped to develop ideas about writing and improving programs.

Description of the Original Program. The basic objective of the program is to have the student develop the ability to understand, speak, read, and write simple, cultured, Latin-American Spanish. Even though the sequence of items in the program is such that the student generally hears a new Spanish element before he says it, says it before he sees it in writing, and reads it before he writes it, the four basic language skills are essentially taught simultaneously. There is no real time lag between practice in any of these skills.

Unit One, the first 316 items of the program, was chosen as the starting point for the study. This unit covers a good sample of the basic Spanish sound system, a limited number of lexical items, and some important aspects of Spanish grammar (e.g., declarative, interrogative, and negative word order in the present tense, position of descriptive adjectives, possessive adjectives, definite and indefinite masculine articles). The program is linear; all students go through all the same items.

The materials consist of a programmed textbook containing instructions to the student, visual stimuli (pictures and writing), space for written responses, and written confirmation of written responses. The student has a mask to cover the correct answers until he has made his response. He then uncovers the mask to check his answer with the correct one. The texts are integrated with tape recordings containing auditory stimuli and auditory confirmation of oral responses.

Appendix A contains a list of the Spanish lexical content in the order of presentation in the program, a list of the grammatical patterns and forms, and a sample of items used in the program.

Criterion Tests. The program content was analyzed to determine the emphasis given to each of the four basic language skills. Based on this analysis, a post-training criterion test was constructed covering each of the four skills. (Appendix B contains all four criterion tests.) In the scoring, listening comprehension and speaking received the most weight, followed by reading, and then writing.

In the test on listening comprehension, each item consisted of a tape-recorded Spanish stimulus and five alternative English responses, from which the student selected the one most closely approximating the stimulus. In reading, the student read a Spanish sentence and selected from among five English alternatives, the one that most closely corresponded to the underlined portion of the Spanish stimulus. In writing, the student had to rewrite Spanish sentences making certain transformations (e.g., change affirmative statements to the negative), write Spanish answers to questions about pictures, and complete Spanish sentences when given the English equivalent of missing portions.

The speaking test is modeled after Pimsleur's "A French Speaking Proficiency Test" and consists of four parts: vocabulary recall, pronunciation, grammatical usage, and fluency.* In the scoring, beginning with the first experimental comparison of the original and revised programs, grammatical usage received the most weight, followed by fluency, pronunciation, and vocabulary recall, in that order. Objectivity in scoring is increased, since for each part of the test only one aspect of speaking performance is evaluated. Parts I and III are designed so that the items are either right or wrong. In parts II and IV rating scales are used. Students' responses were recorded and then judged by three native-speaking Spanish teachers. These judges were trained on the scoring procedures using the tests of students completing the program during the initial revision phase. After satisfactory inter-judge reliability had been achieved, the judges evaluated the speaking tests from the final experimental comparison. Mean scores of the three evaluations were used in the final comparison. See Appendix B for training procedures and inter-judge reliability data.

Subjects. Subjects were provided by the Culver City Junior High School in the Culver City School District and by Lincoln Junior High School in the

*Paul Pimsleur, "A French Speaking Proficiency Test," French Review, Vol XXXIV (1961) pp. 470-479.

Santa Monica Unified School District. In all, 89 seventh-grade students took part in the study, 29 in individual learning sessions and 60 in three formal comparisons of the original and revised programs. Most of the students had no knowledge of Spanish. Some of the students had previously been exposed to a limited amount of Spanish in elementary school. However, a pretest indicated that they recalled only a few isolated words and none of the grammatical structures used in the program.

Physical Setting. For the most part, the study was conducted in SDC's CLASS (Computer Based Laboratory for Automated School Systems) facility. Tutoring sessions with individual students took place in CLASS's small counseling room. Experimental comparisons, involving twenty students simultaneously, took place in the larger instructional areas of CLASS. One formal comparison between the original and revised program took place in the language laboratory of Culver City High School.

TRYOUT OF ORIGINAL PROGRAM

The initial tryout of the original program was to: (1) establish data collection and scheduling procedures, (2) try out equipment and physical arrangement, (3) obtain data on the type of program errors to be expected, and (4) refine criterion tests.

Subjects. Four seventh-grade pupils (two boys and two girls) were selected randomly from a list of 25 volunteers. The volunteers were all children of System Development Corporation employees, and none had previously studied Spanish.

Physical Setting and Procedures. The program was administered to four students individually in SDC's CLASS facility. The students worked at a desk in a small, enclosed room which resembled a recording booth (i.e., the CLASS counseling room). All light was artificial as there were no outside windows. A one-way glass enabled an observer outside the room to look in without being observed by the occupant. An overhead microphone, hanging from the ceiling, was attached to a tape recorder outside the room, and recorded all student oral responses. The student had the programmed text and a tape recorder to play the auditory portion of the program. All instruction took place at SDC, and the student was told not to practice elsewhere. Instructional sessions were scheduled after regular school hours, from approximately 3:15 to 4:15 p.m. Parents provided transportation to and from SDC.

The purpose of the experiment was explained to the student and use of the equipment and materials was demonstrated. A questionnaire was administered to ascertain the student's attitudes towards learning a second language.

The experimenter observed the student from behind the one-way glass, made item-specific notes in a copy of the programmed text and general remarks in

a separate notebook, helped remedy problems with the equipment, clarified instructions upon request by the student, but gave no help with the Spanish content. After each session the experimenter wrote a summary of his observations.

Upon completion of the program, criterion tests were administered in listening comprehension, reading, writing, and speaking. The students also responded to a questionnaire concerning their reactions to the learning experience. (See Appendix C for pre- and post-training questionnaires.)

Results. The mean scores and the range on all tests combined and on each of the major sub-tests (i.e., listening, reading, writing, and speaking) are presented in Table 1.

TABLE 1
Results of Tryout of Original Program

	Maximum Possible Score	Mean Score	Mean (% of Max.)	Range (% of Max.)
Total all tests	212	131	62	33-85
Listening	54	37	68	28-94
Reading	48	41	86	69-100
Writing	39	20	52	31-85
Speaking	71	33	47	15-68

These results show a wide range in achievement on all tests combined as well as on the individual tests. A considerable range in time to complete the program was also evident, i.e., 185 minutes (3 hrs. 5 min.) to 310 minutes (5 hrs. 10 min.).

INITIAL CHANGES TO ORIGINAL PROGRAM

Items were eliminated from the program, shortening it from 316 to 287 items.

The first 41 items in the program provided the students with practice on individual vowel sounds. The student is supposed to learn first to discriminate and then to reproduce correct Spanish sounds. The principal technique used is that of contrasting incorrect English sounds with the correct Spanish sounds (i.e., the English and Spanish pronunciations of the same vowel sounds are given). The following four items taken from the program will serve as an example of this technique. (The star * at the end of the sentence is the

signal for the student to turn on his tape recorder. Below the dotted line on the left is the correct answer which the student covers with a mask. After making his response, the student removes the mask to compare his answer with the right one.)

15.

Your teacher will now pronounce a new set of vowels. One will be a Spanish vowel and the other will be an English vowel. Put a check after the number of the Spanish vowel. *

1. _____

2. _____

- - -

1. ✓

16.

You will now hear the same vowels again. This time repeat the Spanish vowel. *

You repeated vowel number _____.

- - -

2

17.

The Spanish vowel which you have just repeated is written u. Pronounce it and check your pronunciation with the tape. *

18.

You will now hear two Spanish vowels. Write the vowels which you hear. *

1. _____

2. _____

- - -

1. u2. o

Since most students were able to make these discriminations after a few trials, subsequent items of this type seemed superfluous. Furthermore, when students were presented with the incorrect and correct models and asked to reproduce orally the correct Spanish sounds, they frequently repeated the English or both the English and Spanish sounds. Consequently, these items were eliminated from the program.

TRYOUT OF VERSION 1*

Subjects. Four seventh-grade students (three girls and one boy) were randomly selected from a list of volunteers from Culver City Junior High School. None had previously studied Spanish.

Procedures. The procedures were essentially the same as those used in the tryout of the original program described on page 8. The experimenter again helped clarify instructions and remedy equipment problems, but gave no help with Spanish content. However, this time the experimenter remained in the room with the student. Also, with two of the students, the experimenter asked questions when an error was made to try to ascertain the cause of the difficulty.

Results. The mean scores and the range on all tests combined and on each of the individual tests are presented in Table 2.

TABLE 2.

Results of Tryout of Initial Version

	Maximum Possible Score	Mean Score	Mean (% of Max.)	Range (% of Max.)
Total all tests	212	162	76	64-86
Listening	54	43	80	61-100
Reading	48	44	92	79-100
Writing	39	25	64	54-69
Speaking	71	50	70	54-87

*Whenever the term "version" is used it refers to the revised programs.

The mean achievement of these four students was higher than the previous four. The range of scores, although reduced below that obtained with the tryout of the original program, was still considerable. The mean time to complete the program was about the same, 244 minutes (4 hrs. 40 min.), with a considerable range again noticeable--195 minutes (3 hrs. 15 min.) to 365 minutes (6 hrs. 5 min.).

CHANGES TO VERSION 1

Observations of version 1 had suggested to the experimenter that certain items were unnecessary or irrelevant. The program introduced new Spanish words by dividing them into syllables for initial practice on each syllable. As with the vowels the Spanish syllable was contrasted with an English syllable. The following sequence of items taken from the program is an example of how new words were introduced.

85.
Your teacher will pronounce a new Spanish syllable.
Repeat it after her. *
86.
Your teacher will now contrast this syllable with an English syllable. Repeat only the Spanish syllable. *
87.
Here is another new Spanish syllable. Repeat it after your teacher. *
88.
Your teacher will now contrast this syllable with an English syllable. Repeat only the Spanish syllable. *
89.
The two syllables which you have just learned combine to form a Spanish word. Repeat this word after your teacher. *
90.
You have just repeated the Spanish word for CAT.
It is written gato.

When you pronounce the Spanish "t," the tip of your tongue touches the back of your upper front teeth.

Pronounce gato: check your pronunciation with the tape. *

Again, as with the vowels, students frequently pronounced the incorrect English syllables or both the English and Spanish. Furthermore, when asked to pronounce the word as a whole, some students continued to pronounce each syllable separately. Consequently, all English-Spanish contrastive items were eliminated, thus exposing students only to correct Spanish models. Also all new words were introduced as a unit, rather than by syllables.

Another difficulty necessitating change was that students frequently forgot to stop the tape at the proper time and would therefore run into confirmation material or the stimulus for the next item. As an aid to remembering, they were told to stop the tape as soon as they heard the number for the next item.

Version 2 consisted of 257 items, as against 287 items for version 1 and 316 items for the original program.

DISCUSSION OF TRYOUT OF ORIGINAL PROGRAM AND OF VERSION 1

General Observations. At first, students were made uncomfortable by being confined to a small space without windows. They stared around the room or at the one-way glass, and sometimes requested clarification of instructions when it appeared that they understood quite well. This behavior diminished after the first session for most students. With the experimenter in the room (second group of four students), there were fewer requests for help with the instructions. This might indicate that requests during the initial tryout were due in part to a need for contact with the experimenter. However, although requests for help were fewer, students had considerable difficulty in following instructions, frequently making inappropriate responses (e.g., written instead of oral, English instead of Spanish, etc.).

The length of individual sessions varied from one-half hour to one hour depending on personal schedules of students and parents. One hour seemed too long, judging by the restlessness of the students, especially since sessions were held after a full day of regular school.

The students' behavior varied as they progressed through the program. One student lip read all instructions. Another read all English instructions aloud. One student had trouble starting and stopping the tape recorder (didn't depress button hard enough). One student would punish or reward himself out loud depending on whether his response was correct or incorrect (e.g., "No, stupid! You missed again! Very good. That's the way to go!"). One student would say each Spanish word or sound five or six times before going on to the next item (although directions called for repeating after teacher twice). One student would rewind to play previous items again when he made a mistake or was unsure of himself, although no instructions were given concerning going back over items. Some students made oral responses very softly, almost in a whisper.

Prior to taking the program, one of the students expressed negative attitudes towards learning a foreign language based on a brief French experience in elementary school. Most thought learning a foreign language would be difficult.

Upon completion of the program, all but one of the students expressed satisfaction with this way of learning a foreign language. All thought it was easy (even those who did the poorest on the criterion tests).

Some of the favorable comments were:

"I was surprised at how much I seemed to learn in such a short time."

"I liked being able to go ahead as fast as I wanted or as slowly as I wanted."

"I liked finding out right away whether I was right or wrong."

"It seemed very easy."

Some negative reactions were:

"I couldn't always hear the Spanish words clearly."

"The tape-recorder wouldn't always stop when I pressed the button."

"I felt I needed more practice on some words, but it was too hard to find the right place on the tape."

Performance on Criterion Tests. Table 3 combines the results of the tryout of the original program and of version 1, and presents the mean achievement and range on all tests combined and on the individual tests.

Table 3

Combined Results of Tryout of Original Program and Version 1

	Maximum Possible Score	Mean Score	Mean (% of Max.)	Range (% of Max.)
Total all tests	212	147	69	33-86
Listening	54	40	74	28-100
Reading	48	43	90	69-100
Writing	39	23	59	31-85
Speaking	71	42	59	15-87

The mean time to complete the program was 252 minutes (4 hr. 12 min.) and the range was 185 to 365 minutes (3 hr. 5 min. to 6 hr. 5 min.).

The highest achievement was in reading and listening comprehension, the lowest in writing and speaking. It remained to be seen whether the same results would be obtained with additional students and also to what extent achievement in all skills, but especially in writing and speaking, could be improved through the technique of individual tutoring and iterative revisions.

The above scores indicate that for these eight students the goal of programmed learning (i.e., having all students master almost all of the material differing only in the time to complete the program) was not realized, and that the program would be open to further improvement.

TRYOUT OF VERSION 2

Subjects. Fifteen seventh-grade students (eight boys and seven girls) were randomly selected from a list of volunteers from Culver City Jr. High School.

Procedures. The first six students went through the entire program and took the criterion tests in the four skills. The next nine students worked only with the first 100 items, which had been divided into two units of approximately 50 items each. These students took diagnostic tests at the end of each unit but did not take the final criterion tests.

The program was administered individually to each student. Tutoring took place with all students. The experimenter remained in the room with the student the entire time. Whenever an error was made the experimenter would question the student to (1) see whether the student was aware of the error, (2) determine the cause of the error, and (3) provide practice to help the student overcome the difficulty.

Notes were kept on remedies tried and the results. When a particular remedy appeared to be effective, an attempt was made to incorporate it into subsequent sessions with the same student and with students who followed. Such revisions to the program were made, as needed, on a day-to-day basis by making written changes in the programmed text, by inserting new pages in the text, and by the experimenter orally substituting for portions of the tape-recorded auditory stimuli. When a number of changes made it desirable, complete sections of the text were revised and reproduced and a new master-tape recorded. Revisions were based on (1) observations during the tutorial sessions, (2) analysis of written responses in the programmed text, (3) analysis of diagnostic test results, and (4) analysis of the post-training criterion test results.

General Observations. There was practically no difficulty in handling the equipment. Following program directions, however, continued to be a major problem. This group, like the previous students, exhibited varied behavior;

one student, before making a Spanish response to a Spanish stimulus, would first translate aloud both stimulus and response into English.

Judging from the pre- and post-training questionnaires, most students thought learning a language was important either for traveling or for going to college. In general, they felt that this way of learning a language was very interesting and easy. A few had had classroom experience with Spanish or another language and felt this was a more interesting and easier way to learn. Most, including the ones who didn't do well, felt that they had been successful in learning the material presented. The following are some student responses to questions about the experience:

Q. What did you like most about your Spanish lessons?

"I found it very easy to learn the material."

"Being able to find my mistakes when I make them and being able to correct them (in my mind) right away."

"The fact that I could go along at my own speed."

"I learned something fast enough so it wasn't dull."

Q. What did you like least?

"Sometime I felt that I was going too slowly."

"Some of the directions didn't seem clear, but it was probably my own fault because after the meaning was pointed out, they became very clear."

"I got tired when I was in there for too long a time. Getting up and walking for a few minutes every 15 minutes or so made me feel better."

"They didn't cover very well some of the questions which were on the tape."

"The same procedure was used a little too much."

Q. What caused you the most difficulty?

"Remembering the order of words in sentences."

"Repeating long sentences. Placement of the adjective."

"Negative forms of sentences and asking questions out loud in Spanish when given the English question in writing."

"Copying what I heard on the tape."

"Sentence structure. Where to place adjectives."

"Saying phrases in Spanish."

Performance on Criterion Tests. The mean scores and the range for all tests combined and for each of the individual tests for the six students completing the entire program are presented in Table 4.

Table 4

Results of Tryout of Version 2

	Maximum Possible Score	Mean Score	Mean (% of Max.)	Range (% of Max.)
Total all tests	193	136	70	61-82
Listening	54	35	65	28-83
Reading	48	45	94	88-100
Writing	39	21	54	31-77
Speaking	52	35	67	56-75

As compared with the previous eight subjects (original program and version 1), the mean total achievement of 70% did not differ substantially (prior subjects 69%). The range of scores was reduced from the previous means of 33-86% to 61-82%. Highest achievement once again was in reading (94%) and lowest in writing (54%). Speaking was higher and listening lower this time. Individual differences in students were obviously still a key factor in the variability of the results.

The mean time to complete the program was 227 min. (3 hr. 47 min.) and the range was 182-268 minutes (3 hr. 02 min. to 4 hr. 28 min.).

CHANGES TO VERSION 2

The practice of tutoring the student every time he made an error had several shortcomings. It caused frequent interruptions which seemed to affect the student's concentration adversely. When left untutored, students frequently corrected errors on subsequent items without help. It was easier to discern the pattern of student difficulties by observing errors over a series of items. Short diagnostic tests were prepared for each of the four basic language skills covering 50 item segments of the program. They were administered at 50-item intervals, and tutoring took place at this time rather than every time the student made an error. With some students, the experimenter remained out of the room until it was time to administer a diagnostic test and tutor the student.

The "Mark-Q-Matic" sensing device was attached to the tape recorder and used to preprogram the recorder to stop automatically after presentation of the auditory stimulus material and again after the confirmation material. (A special sensing pencil is used to place short marks on the tape. When this mark passes through the sensing device, the tape recorder automatically stops.) Prior to the use of this device, the student would read his instructions in the programmed text, start the tape to hear the stimulus material in Spanish, then stop the tape before making his response. This extra action and the increased time delay it causes between the stimulus and the response acted as a source of interference. Sometimes the student would forget to stop the tape and would hear the confirmation message or the next item at the same time he was making his response. Other times, especially if the Spanish utterance was long, the students would have trouble remembering the stimulus.

The "Mark-Q-Matic" relieved this situation and reduced the amount of time necessary to complete the program; however, it was discontinued as it did not function reliably. After the "Mark-Q-Matic" was discontinued, students continually failed to stop at the appropriate time. To remedy this the sound of a horn was added to the tape as the signal to stop the tape recorder. This worked well, although not perfectly.

Students continued to have difficulty in following instructions. The major problem appeared to be excessive variability in required response behavior from item to item. Each item required a different type of response and a new set of instructions in English which students had to read carefully, but often did not. Some examples of student errors are:

- a. Repeating after model when asked just to listen.
- b. Listening when asked to repeat.
- c. Writing a response when asked to say it and vice versa.
- d. Writing a response in English instead of Spanish.

Several steps were taken to remedy these difficulties:

- a. The instructions "listen" or "repeat" were added to the tape just prior to the stimulus or confirmation material.
- b. The written English instructions in the text were simplified and shortened, and key words were underlined (e.g., say aloud, write in Spanish).
- c. English reading was reduced by replacing instructions with symbols (e.g., "check your answer with the tape" was replaced by a check mark, "✓").

According to the observations of the students themselves, explanations in English about placement of tongue, lips, etc., designed to aid pronunciation were not particularly useful to most students and were confusing to some. These explanations were eliminated.

Students were careless in their use of the possessive adjectives (su,mi) and the masculine articles (el,un), translating them inaccurately and using them interchangeably. To remedy this, contrastive items which forced the student to focus on the differences in sounds, meaning, and usage were added to the program. Also, these words and their English equivalents were underlined when they appeared in the stimulus material.

Students had trouble, in both writing and speaking, with the position of the Spanish word for "not" (i.e., no) in negative sentences and also with the introduction of two negatives in a sentence (e.g., no, it is not my cat = no, no es mi gato).

In the original program the student learned "no" as an isolated word meaning "no" or "not" in English. After learning the expression, "Es mi mano" (It is my hand), he was given the sentence "no es mi mano" (It is not my hand) to write from dictation. Without having previously heard, spoken, or seen this sentence as a unit, he is asked to translate from English to Spanish, first orally and then in writing, the sentence, "It is not my hand" (No es mi mano). Immediately following this he is asked to translate from English to Spanish the sentence, "No, it is not my hand" (No, no es mi mano), although he had never seen, heard, spoken, or written this Spanish sentence with the two negatives. Errors were frequent in this sequence.

The revised material included a more gradual build-up. First, dealing with the single negative sentence "no es mi mano," the student hears it three times, repeats it three times, sees it in writing, and then repeats it, gives its English meaning, copies the Spanish sentence twice, writes it from dictation, and reads it aloud checking his pronunciation with the tape. The same sequence is then repeated with the double negative sentence "No, no es mi mano." This is followed by contrastive items which focus the student's attention on differences between the single negative and double negative sentences.

Of the four basic language skills, writing achievement was consistently lowest on diagnostic and criterion tests. More items requiring written responses in Spanish were included and a slower build-up in task complexity was provided (e.g., the student would receive practice in copying new Spanish material before writing from dictation).

Students frequently had difficulty in pronouncing new words and expressions accurately. When a new word or phrase was introduced, the student would hear it once and immediately imitate it; the student would then hear the word a second time and repeat it again. The procedure was revised so that new

material would be presented three times, for listening only, before the student spoke it. The student would then repeat three times after the Spanish model.

When the student was first introduced to the written form of a Spanish word, after having heard it and pronounced it, he would be asked to read it aloud immediately. At times the pronunciation was quite poor, apparently because the association between the graphic symbols and the sounds had not been explicitly established. In the revised version, the student would first look at the word as he heard it pronounced twice and then would imitate the Spanish model on the tape as he looked at the word again, before pronouncing it on his own from the graphic symbols.

Some frames had to be revised because the students were responding inappropriately and therefore receiving practice in the wrong skill. Item 134 is an example:

- - -

134.

Write the Spanish words which you hear under the corresponding pictures. *



plato

mano

gato

queso

Most students wrote the Spanish word for the picture they saw before turning on the tape. This item was changed as follows to make it a listening item as well as a writing item:

134.

Your teacher will pronounce 4 Spanish words which correspond to the pictures below. Write the number 1 under the picture of the first word you hear, number 2 under the second, and so on. *



1

3

2

4

135.

Write the Spanish word which goes with each of the pictures in item 134.

queso

mano

plato

gato

Periodically, after the student had made an incorrect oral response and had heard the correct response on the tape, the student would be asked whether his response had been correct. He would frequently say that it had been. This occurred not only with pronunciation but in regard to other aspects of speaking where discrepancies between the student's response and the confirmation message should have been obvious (e.g., answering a question affirmatively when a negative response was called for).

In an attempt to force the student to focus more closely on the confirmation message, we required him to evaluate each response overtly by making a mark in the programmed text. This approach was not successful. Students would frequently forget to evaluate or evaluate incorrectly. Instruction were changed so that students not only listened to confirmation messages but also repeated them. This insured that the student would at least say the correct response before proceeding to the next item.

FIRST EXPERIMENTAL COMPARISON

Subjects. Twenty seventh-grade students from Culver City Junior High School participated in the study. They were randomly assigned to two groups of ten each (i.e., group one, original program; group two, version 3 of revised program).

Procedures. Although the original program was designed primarily for individual, independent study, the publishers advertise that it can be used in a group mode of instruction. In this mode, all students progress from item to item simultaneously. The students signal the teacher when they have read the instructions in their programmed text. The teacher then plays the tape to present the auditory stimulus and waits until all students have completed their responses before playing the confirmation message.

The first comparison of the original program and version 3 of the revised program was conducted in the group mode in the SDC CLASS facility. Each student had a response device on his desk which enabled him to extinguish a light on the teacher's desk. When all lights were out, the teacher knew the class was ready for the next item.

General Observations. Several shortcomings were observed in the group mode with both versions of the program. Since the pacing was geared to the slowest student in the class, students became restless and talkative while waiting for others to finish reading instructions or to complete a response. With oral responses, the most aggressive student would speak up first and other students would imitate him (whether he was correct or incorrect). The noise level was generally high and the students at times acted silly. After one student blurted out an incorrect response, another one, obviously irritated, shouted, "not 'su gato,' stupid, 'mi gato.'" The situation was especially bad when a long response was required, such as, "No es ni un gato ni un lobo. Es un oso."

Two students in the original program group did not complete the program due to illness. In the same group, two other students were absent one day, had difficulty with the program thereafter, and did not take the criterion tests. All ten students in the revised program group completed the program and the criterion tests.

Performance on Criterion Tests. The two groups did not differ significantly on all tests combined or on any of the individual tests (i.e., listening comprehension, reading, writing, and speaking). The means and the standard deviations for all tests combined and for the individual tests are presented in Table 5.

Table 5

Results of First Experimental Comparison

	Max. Possible Score	Revised Program			Original Program		
		Mean Score	Mean (% of Max.)	S.D.	Mean Score	Mean (% of Max.)	S.D.
Total all tests	197	136	69	20.00	132	67	16.39
Listening	54	33	61	7.87	31	57	7.29
Reading	48	43	90	3.05	44	92	4.79
Writing	39	25	64	6.17	22	56	4.58
Speaking	56	35	63	7.13	33	59	3.94

The highest achievement for both groups was in reading. The variability was considerable for all tests combined and for each of the individual tests for both groups.

The revised group required 193 minutes (3 hr., 13 min.) to complete the program and the original group 426 minutes (3 hr., 46 min.).

CHANGES TO VERSION 3

Student ability in particular language skills exhibited wide individual differences; this is clearly indicated by the wide range of achievement among students on all tests combined and on the individual tests.

To provide more individualized practice, a limited form of branching was initiated. The revised program was divided into five units of approximately 50 items each. A combined diagnostic and review exercise was provided for each of the four skills at the end of each unit. All students went through all review exercises for each unit. The students scored themselves on each item and went back over each exercise until a perfect score was made.

SECOND EXPERIMENTAL COMPARISON

Subjects. Twenty seventh-grade students were randomly assigned to two groups of ten each (i.e., group one, original program; group two, revised program version 4).

Procedures. The comparison was conducted in the individual mode of instruction. Each student worked independently, at his own rate of speed; upon completion of the program, tests in listening comprehension, reading, writing, and speaking were administered individually. The comparison took place in the language laboratory of the Culver City High School after regular school hours, from approximately 3:15 to 4:15 daily. The experimenter was available to answer questions about the instructions or the equipment; however, no help was given with the Spanish content.

General Observations. The combined diagnostic-review exercises at the end of each unit were not effective. Some students skipped them. When asked why, they indicated that they were getting behind and wanted to complete the program at the same time as their friends. Other students were careless in the scoring (marking items correct when they were incorrect), and therefore proceeded to subsequent units without repeating the review exercises until a perfect score had been achieved.

Some of the students were making oral responses in a whisper or not at all. They had to be reminded to speak up whenever the instructions called for an oral response.

Most of the students were quiet and worked diligently. However, some of the lower achievers became restless after a short period of time and would ask permission to leave the room, or would start talking to a neighbor, or request some help of the experimenter. Most of the students in both groups expressed satisfaction with this way of learning a foreign language.

Performance on the Criterion Tests. The mean scores on each individual test, as well as on the total of all tests, did not differ significantly for the two groups. The means and the standard deviations for all tests combined and for the individual tests are given below for both groups.

Table 6

Results of Second Experimental Comparison

	Max. possible score	Revised Program			Original Program		
		Mean score	(% of Max.)	S.D.	Mean score	Mean (% of Max)	S.D.
Total all tests	197	154	78	20.40	136	69	27.82
Listening	54	42	78	8.74	39	72	9.33
Reading	48	44	92	2.70	42	88	6.25
Writing	39	30	77	5.01	22	56	6.84
Speaking	56	38	68	7.65	33	59	9.20

The revised group mean time to complete the program was 241 minutes (4 hr., 01 min.) compared to 171 minutes (2 hr., 51 min.) for the original group.

DEVELOPMENT OF THE FINAL PROGRAM VERSION (VERSION 5)

Subsequent tutorial sessions were devoted to improving the branching procedures and the remedial exercises. The results thus far had indicated that the program was still too difficult for some students, while others mastered most of the material. Revision of the program to provide smaller steps and additional practice would penalize higher-achieving students. Adding remedial branches for the benefit of the slower students would cause them to experience frequent failure before undertaking the necessary remedial practice. Therefore, it was decided to provide separate tracks for slow and fast students. These tracks were parallel in content and format but differed in such dimensions as step size, amount and type of practice, cueing, and sequencing of sub-skills. Track A, the fast track, was developed from an earlier version of the revised program (version 2). The latest version of the revised program (version 4) was used as the basis for the slow track, Track B. The same end-of-unit diagnostic tests (one for each of the four basic skills) were used for both tracks. Branching took place at the end of each unit on the basis of the diagnostic test results. Branching was done by individual language skill so that a student who had trouble with one skill undertook remedial exercises in that skill only. (See Appendix D for sample items from the final program version.) The revised program was tried out individually with six students to evaluate the effectiveness of the branching. After administering the program to each student, further

revisions were made, especially to the remedial exercises. Also, a second level of branching was added to the program. Thus, at the end of each unit, two levels of branching were provided for each of the four basic skills. The first level was a fast branch providing some additional practice for students making minor or careless errors. The second level was a slow branch for students having serious difficulty with particular linguistic problems. It provided extensive remedial practice which had proved effective in the tutorial sessions.

Where a student made low scores on all four diagnostic tests at the end of the unit, he was sometimes required to repeat the unit. This procedure was not effective in improving performance. The student generally repeated the same mistakes and failed to raise his score appreciably on the diagnostic tests. Repetition of a unit was not used as a remedial branch until the student had shown improvement based on remedial exercises. At this point repetition seemed to provide valuable overlearning.

Some students still did not stop the recorder at the appropriate times, despite the sound of a horn on the tape as a signal. Also, even when students stopped the tape appropriately, having to take this action between receiving the stimulus and making a response seemed to interfere with learning (e.g., student forgets stimulus, forgets nature of response to be made). This situation was remedied by using the automatic-stop capability of our four-channel tape recorders. By placing a tone burst on channel three of the tape, it was possible to preprogram the recorder to stop automatically immediately following presentation of the stimulus material. The student could then take as much time as he needed to make his response. The student's sole action was to start the tape when he was ready for the next item.

All students began with Unit I of the fast track (Track A). The results of the diagnostic tests administered to each student at the end of Unit I showed a wide range of achievement, and subsequent branching paths followed by these students differed considerably. Some students went through Track A with little remedial help, while others worked in Track B and needed extensive help. For example, the student who received the lowest score on the diagnostic tests following Unit I, Track A, (i.e., no correct responses in reading, writing, or speaking, and a 40% score in listening comprehension) went to Track B, took all of the remedial exercises, and was tutored frequently by the teacher after every unit. Beginning with Unit III, remedial help was concentrated in two skills only--listening comprehension and reading. After completing the program he received the criterion tests in those two skills. He then went back and completed all the remedial exercises in speaking and writing prior to taking the criterion tests in those two skills. His time to complete the program was the highest of all the students; (766 minutes or 12 hr., 46 min.). However his final achievement was substantial--76% on all tests; listening comprehension 61%; reading 94%; writing 74%.

Branching Structure of the Final Program Version. Figure 1 on page 28 is a flow diagram depicting the branching structure used in the final program version. Activities are represented by rectangles, and the direction of flow between activities is shown by arrows. Decision points or branches are represented by diamond-shaped figures. The alternative branches or routes are represented by arrows originating from the points of the diamond.

The flow through the program is as follows:

1. All students begin with Unit I, Track A (fast track).
2. All students complete Unit I.
3. All students take diagnostic tests in the four skills, i.e., listening comprehension, speaking, reading, and writing. Three alternative branches are possible at this point (a, b, and c). If the student makes satisfactory scores on all tests, he takes Branch a and goes on to Unit II in Track A. If the student has made a limited number of minor or careless errors in any of the skills, he takes Branch b, which provides first-level remedial exercises in any or all of the four skills. In each skill where the student has made an excessive number of errors, he takes Branch c, which provides second-level remedial exercises in any or all of the skills. The student may be branched to b for some skills and to c for others at this point. Branching decisions were made by experimenter judgment.
4. Diagnostic tests are readministered for each skill in which the student has taken remedial exercises. Four branches are available at this point. If the student has had a minimum amount of remedial work and his scores are satisfactory, he will take Branch a and go on to Unit II, Track A. If he has had more extensive remedial work and his scores are now satisfactory, he will take Branch d and go on to Unit II, Track B. For those skills in which the student is still making a limited number of minor errors, he takes Branch b and goes to first-level remedial exercises. For those skills in which he is still having serious problems, he is branched to the teacher for help (Branch e).
5. Diagnostic tests are readministered for those skills in which the student has received additional help. Two alternative routes are available. In Branch d, the student, who has improved sufficiently, goes on to Unit II, Track B (slow track). If the student has not improved sufficiently to go on to Unit II, Track B, he takes Branch f (i.e., Unit I, Track B).
6. Following Unit I, Track B, diagnostic tests are readministered. Two branches are possible. In d, the student goes on to Unit II, Track B. In g, the student is again branched to the teacher for help but this time in a limited program in which instruction is limited to one or two skills.

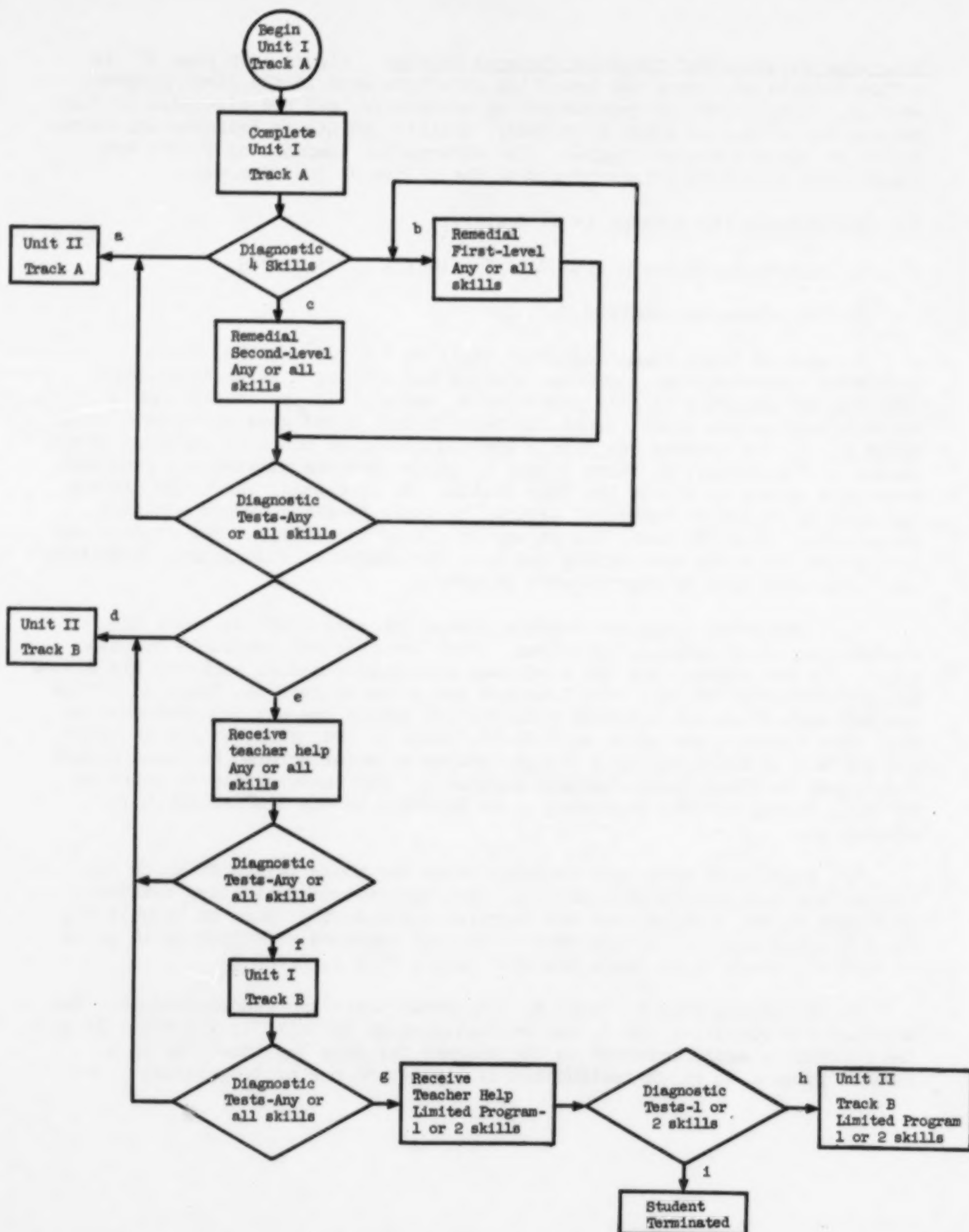


Fig. 1. Branching Structure in Final Program Version

7. Diagnostic tests are readministered in skills in which the student received teacher help. Two branches are then available. If the student's achievement is satisfactory, he will continue on to Unit II, Track B, limited program (Branch h). (He will stay in the limited program until he achieves satisfactory scores on the final criterion test. At that point he may again undertake instruction in the other skills.) In Branch i, the student is terminated from the program if it is decided that further instruction, under the learning conditions provided, would not be profitable.

8. The student may be branched from Track A to Track B and vice versa during the program. The results of the student's performance on Unit I of Track A seemed to be a reliable screening device for determining whether the student would be in the fast or slow track, since students branched to Track B usually stayed there throughout the program.

Performance on the Criterion Tests. The mean achievement and the range on all tests combined and on the individual tests are presented below.

Table 7

Results of Tryout of Final Version

	Maximum Possible Score	Mean Score	Mean (% of Max.)	Range (% of Max.)
Total all tests	197	175	89	76-94
Listening	54	46	85	61-94
Reading	48	47	98	95-100
Writing	39	35	90	74-100
Speaking	56	47	84	75-91

The mean total scores on the criterion tests, when compared with previous results, showed an increase in achievement over all prior revisions and the original program. Also, the range was reduced for all tests combined and for the individual tests.

The time required to complete the program varied from 268 to 766 minutes (4 hr., 28 min. to 12 hr., 46 min.).

FINAL EXPERIMENTAL COMPARISON

Subjects. Twenty seventh-grade students from Lincoln Junior High School in the Santa Monica Unified School District participated in the experiment. Ten pairs of students were matched on the basis of I.Q., and on grade point average in English, Social Studies, and Math. One student from each pair was randomly assigned to group one (revised program, version 5); the other student was then placed in group two (original program). Each group consisted of five boys and five girls.

Procedures. The comparison was conducted in SDC's CLASS facility. The sound-attenuating partition in CLASS was closed, creating two identical ten-position classrooms. Instruction for the two groups was conducted concurrently from approximately 3:30 to 4:30 P.M. daily until all students completed the program. The individual mode of instruction was employed with each student working independently at his own rate of speed. Criterion tests were administered individually as each student completed the program. Two Spanish-speaking persons were employed to administer the speaking tests. Student responses on the speaking test were recorded for subsequent independent evaluation by three judges.

There was an experimenter in the room with group two (original program) to answer questions concerning instructions and procedures and to help with equipment problems. An experimenter with group one (revised program) served the same function, but in addition administered diagnostic tests after each unit and gave remedial help. Remedial help occurred only at the end of a unit and was based on the diagnostic test results.

Results. Appendix E presents the raw scores on the criterion tests, time to complete the program, scholastic aptitude, and grade point average for each student in both groups. The mean scores on the total of all tests, as well as on each individual test, were higher for group one (revised program). These differences are significant for the total of all tests ($t = 3.19, p < .01$), for listening ($t = 2.07, p < .05$), for reading ($t = 2.64, p < .01$), for writing ($t = 4.17, p < .01$), and for speaking ($t = 2.81, p < .01$). There was no significant difference between the groups on a Spanish pretest. A one-tailed t -test was used, as we predicted the direction of the results in favor of the revised program. Table 8 presents a summary of the results of the analysis of data.

Table 8
Results of Final Comparison

	Max. Possible Score	Revised Program			Original Program			T	P
		Mean Score	Mean (% of Max.)	S.D.	Mean Score	Mean (% of Max.)	S.D.		
Total all tests	197	167.89	86	11.48	120.40	61	40.80	3.19	< .01
Listening	54	40.00	74	6.00	31.20	57	10.67	2.07	< .05
Reading	48	47.22	98	1.22	38.00	79	9.86	2.64	< .01
Writing	39	34.11	87	2.64	18.50	49	10.31	4.17	< .01
Speaking	56	46.55	84	5.7	32.70	59	12.87	2.81	< .01
Time in minutes		263.33		66.54	180.00		38.94	3.19	< .01
Spanish pretest	142	27.00	19	30.57	23.6	17	33.30	.22	Not significant

The highest achievement for both groups was in reading (revised 98%, original 79%). Since students taking the original program in prior tryouts and comparisons consistently scored high in reading, the least room for improvement was in this area. With writing, the opposite was the case; the students consistently scored lowest in this skill. The results of the final comparison indicate that the greatest improvement took place with writing, which was the second highest area of achievement for the revised program students. The greatest difference in achievement between the two programs was also in writing (revised 87%, original 49%), followed by speaking (revised 84%, original 59%).

Although the variability for the final revised program was smaller than for all previous revised program versions, it was sufficient (except for reading) to suggest the need for further improvement of the two main tracks as well as the possibility of a third track. A third, faster track was in fact developed but was not tested.

The mean time to complete the revised program was higher (263 minutes, or 4 hours, 23 minutes) than for the original program (180 minutes, or 3 hours). The additional time required for the revised program can be attributed in part to an overload condition which occurred when several students finished a unit simultaneously or needed remedial help at about the same time. Some students had to wait for assistance. This situation was partially relieved by reducing the frequency of the diagnostic testing for the higher-achieving students. Although further study of this problem might result in the discovery of additional remedial procedures (e.g., automating part of the testing), it is possible that with a flexible program using extensive branching procedures, the amount of extra time needed by slower students to achieve satisfactory results may be greater than the amount of time saved by faster students.

Students' reactions to the learning experience were generally favorable for both groups. (See Appendix F for student responses to an open-ended question concerning their attitudes towards programmed learning.)

CONCLUSIONS

The research described in this report was exploratory. The purpose was to discover how a system of instruction could be improved and to develop hypotheses concerning programming methods. A significant improvement was achieved through the technique of individual tutoring and iterative revisions. In the process, observations were made which permit some tentative conclusions about programmed instruction in foreign languages.

1. Programs can and should be made more responsive to individual differences in learners.

Linear programs are said to be effective when 90% or more of the students achieve 90% or more on the post-training criterion test. In such a program, the steps generally have been made small enough so that the slower students achieve success. There is a question as to whether a considerable amount of the brighter students' time is being wasted. Boredom and frustration may also be problems with the more capable students.

The initial tryout of the original commercial program indicated that it was too difficult for many students, although a few mastered most of the material. Revising the program to provide smaller steps would have penalized the higher-achieving students. Adding remedial branches for the benefit of the slower students would not have been satisfactory, as it would have caused them to experience frequent failure before undertaking the necessary remedial practice. We found that separate tracks were necessary for slow and fast students. These tracks were parallel in content and format but differed in such dimensions as step size, amount and type of practice, cueing, and sequencing of subskills. Depending on the number of students having similar success or difficulty with the material, two or more tracks might be required in order to provide maximum responsiveness to individual differences.

In the early stages of development of a program, using minimal steps obscures unnecessary or irrelevant items. If the initial tryout indicates high achievement for most students, the programmer does not know if the same results could have been accomplished with larger steps and in less time. The goal should be optimal steps rather than minimal steps. It would appear easier to get to optimal step size by starting with large steps rather than small ones. Excessively large steps are discovered immediately in initial tryouts. If an initial tryout indicates that the program is too difficult for most students, but that some students have mastered most of the material (as was the case in the tryout of the original program), then the initial version might be considered as the basis for a fast track.

Branching is an important method of increasing a program's responsiveness to individual differences. Within the two-track program there were still large differences in student performance. Students' difficulties varied not only with individual linguistic elements but also with particular language skills. Failure to master material at each step of the way caused greater and greater difficulties as the program progressed and resulted in low performance on criterion tests. Remedial exercises leading to mastery were necessary; however, exercises which require practice in all skills waste time for some students. Branching was therefore introduced by language skill and by linguistic problem within each skill; thus, a student having difficulty with writing but not with the other three skills was able to receive additional help in writing alone.

Learning the four basic language skills simultaneously was very difficult for some students. For example, some students could not write English well; in learning a foreign language, it was unrealistic to expect them to do well in writing and at the same time learn to understand, speak, and read. It seemed apparent that some of the students could have achieved satisfactory results in one or two of the skills if relieved of the necessity to learn all of them. Students who were having difficulty with all skills were branched to remedial exercises in one or two skills only. After satisfactory completion of all units, limited to one or two skills, the pupil went through the program again, concentrating this time on the remaining skills.

Ideally, when a language program has the objective of teaching the four basic language skills (listening, speaking, reading, and writing) it should be designed to enable pupils to receive training in one particular skill at a time or some combination of skills. Where satisfactory acquisition of all four skills seems unattainable or impracticable under the particular learning conditions, it should be possible to limit the terminal behavior to one or more skills without receiving training in all of them.

2. The teacher has an important role to play in connection with the use of programmed materials.

In the beginning of the study, the teacher was used to tutor students for the purpose of revising and improving the materials. It was not until the

development of the final version that the teacher was actually used as a branch in the program.

At the seventh-grade level, it appeared that relatively few students were capable enough or motivated enough for completely independent study. Monitoring, testing, branching, and remedial tutoring were important functions of the teacher.

In the early stages of the program, the important function of the teacher was to see that the students were performing according to directions. Slower students had intermittent problems in following directions throughout the program, especially when new material or new tasks were introduced. The teacher monitored the students very closely during the early stages; later, when slower and faster students had been identified, the teacher spent more time monitoring the slow students.

Self-scoring of end-of-unit diagnostic tests and self-branching to remedial units by students were not effective. Students were generally careless in scoring. They were also reluctant to branch themselves to remedial units as they wanted to keep up with their friends. When the teacher scored the tests and branched students, learning improved.

When a student's achievement failed to improve significantly after going through the remedial exercises, he was referred to the teacher for help. The teacher was able to provide a variety of exercises and techniques which would have been impractical to include in the program itself. Further, the teacher provided a type of personal encouragement (e.g., a smile, a remark, etc.) which was not possible when the student worked on the program by himself. Student restlessness decreased and concentration increased during and after contact with the teacher. When several students finished a unit simultaneously or needed help at the same time, an overload situation occurred. This was relieved, in part, by reducing the frequency of the diagnostic testing for the higher-achieving students. However, waiting did occur. This problem, as well as the entire question of the role of the teacher and teacher-pupil ratio in a partially self-instructional system, needs study.

3. Excessive variability in required response behavior from item to item can interfere with learning.

In the original program, each item required a new set of instructions which students had to read carefully but often did not. It would appear that at this age level, and especially for the average and slow students, response behavior should be kept constant over a series of items so that one set of instructions is sufficient for all items in the series. This was done in the revised version, primarily with the remedial exercises. Variety can be introduced in other ways; for example, in the stimulus materials, in the feedback materials, and with each new series of items.

4. With programmed instruction, self-evaluation by students may be a problem not only for pronunciation but also for other aspects of speaking.

Students did not pay sufficient attention to confirmation messages on the tape and consequently often proceeded to the next item thinking a response was correct when, in fact, it had been wrong. We first required students to evaluate each response overtly by making a mark in the programmed text. In addition to forcing the student to focus more closely on the confirmation message, we thought the scoring procedure would increase motivation. This approach was not successful. Students would frequently forget to evaluate or evaluate incorrectly. Incorrect evaluation would occur even in the case of structural items where discrepancies between the student's response and the confirmation message should have been obvious. This phenomenon should be studied further since most foreign language programmers have been primarily concerned with the student's ability to evaluate his own pronunciation.

In the final program version, instructions were changed so that pupils not only listened to confirmation messages but also repeated them. This insured that the student would at least say the correct response before proceeding to the next item.

5. For most seventh-grade students working with programmed instruction, short, frequent instructional sessions are better than longer ones.

Students become restless after 15 or 20 minutes of working by themselves. Forty-five-minute sessions are too long for most students. (In this case it may have been partially due to the fact that instructional sessions were held after a full day of regular school.)

6. Frequent diagnostic testing improves learning.

In spite of low error rate on the program itself, some students made low scores on criterion tests. The diagnostic tests provided a means of determining whether the student actually was mastering the material as he went along. They helped pinpoint student difficulties and served as the basis for assigning remedial work. Also, they increased motivation by providing short-range goals and frequent indications of progress.

7. Programs designed primarily for individual self-instruction are not readily adaptable to group instruction.

The Spanish program in our study was designed primarily for individual instruction. When it was used in a group mode, certain shortcomings were evident. One was the large amount of English instruction for each item, which produced restlessness in students waiting for others to finish reading or making a response.

Another problem was that students often imitated the first responder, even when the response was incorrect. However, these may be shortcomings of this particular program and a program developed with both individual and group instruction in mind could be more successful (for example, a program that taught listening comprehension separately would be more readily adaptable to group instruction).

8. Special training in discriminating between Spanish and English sounds does not enhance student performance.

The extent to which a student can evaluate his own oral responses is an important question for language programmers. Some programmers have assumed that the student must first receive specific training in aural discrimination in order to become an effective evaluator of his own pronunciation. Depending on the programmer, discrimination training generally has meant distinguishing between good and poor pronunciation or English and native pronunciation, or distinguishing between similar sounds within the total phonology of the foreign language.

Every person who understands and speaks a language has learned how to discriminate among the sounds of that language. In foreign language instruction, however, a major question is how this ability should be acquired.

The discrimination training used in the original program, that of contrasting correct Spanish sounds with incorrect English sounds, was not effective. Elimination of these items saved time and appeared to have no adverse effect on achievement. Controlled experimentation is needed to determine whether or not this and other types of discrimination training do, in fact, improve learning.

9. Students generally react favorably to programmed materials.

Pre-training questionnaires indicated that most of the students were interested in learning a foreign language but not very confident in their ability to do so. Most felt that learning a foreign language would be difficult. Post-training questionnaires indicated that most students liked this way of learning and felt that it was easy. (However, even those who did poorest in achievement felt that the learning was easy.) Some students did express a preference for studying with a teacher in a group situation.

10. Self-study by seventh-grade students using programmed materials can be effective.

In spite of apparent weaknesses in the original program when used at the seventh-grade level, some students achieved high scores on the criterion tests and apparently had the ability and motivation to work independently. This alone would be significant, even if programs could not be written which proved effective with larger numbers of students at this age level. Qualified language

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teachers could spend more time with students of lower aptitude. It also would permit students to study languages which otherwise would not be available in the school curriculum.

It is also important to note that some students, who probably would have been failures or drop-outs in a group-mode, lock-step situation, were able to achieve a substantial amount of learning with the highly flexible revised program.

On the other hand, most of the students seemed to lack the ability and motivation for completely independent study. Judging by the restlessness of students after short periods of working alone and their inability to sustain concentration, it appears that motivation would be a serious problem in any extended program of individual self-instruction. With better and more interesting materials this problem might be reduced; however, with most students of this age level, some combination of individual, small-group, and large-group study would seem necessary, as well as teacher presence and assistance during individual sessions. Much experimentation is needed to determine the most effective organizational patterns and employment of human and material resources.

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APPENDIXES

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APPENDIX A

LIST OF CONTENT AND SAMPLE ITEMS
FROM ORIGINAL PROGRAM

PART I

Spanish Lexical Content
In Order of Introduction
In Original Program

- | | |
|--------------|-----------------|
| 1. no | 14. qué |
| 2. mano | 15. el lobo |
| 3. mi | 16. ni ... ni |
| 4. es | 17. el vaso |
| 5. su | 18. el palo |
| 6. sí | 19. el libro |
| 7. el gato | 20. negro |
| 8. el plato | 21. el sombrero |
| 9. o | 22. blanco |
| 10. el queso | 23. el auto |
| 11. el oso | 24. bonito |
| 12. un | 25. muy |
| 13. esto | |

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PART II

Spanish Grammatical Patterns
In Order of Introduction
In Original Program

PATTERNS AND FORMSEXAMPLES

- | | |
|--|---|
| 1. Possess. adj + noun | 1. Mi mano |
| 2. (Irregular) third pers. sing. verb form + possess. adj. + noun | 2. Es su (su or mi) mano. |
| 3. Negative adverb + third pers. sing. verb + possess. adj. + noun | 3. No es mi mano. |
| 4. Double negative adverb + third pers. sing. verb + possess. adj. + noun | 4. No, no es mi mano. |
| 5. Affirm. adverb + third pers. sing. verb + possess. adj. + noun | 5. Sí, es mi mano. |
| 6. Noun + conj. + noun | 6. Mano o plato
¿Es su mano o su gato? |
| 7. Indef. masc. art. + noun | 7. Un gato
¿Es un gato?
¿Es un oso? |
| 8. Verb + neuter demonstr. pronoun + masc. sing. indef. art. + noun | 8. ¿Es esto un gato? |
| 9. Interrog. pronoun + verb + neuter demonstr. pronoun | 9. ¿Qué es esto? |
| 10. Neg. conj. + masc. sing. indef. art. + noun + neg. conj. + masc. sing. indef. art. + noun | 10. Ni un gato ni un lobo |
| 11. Negative adverb + third pers. sing. verb + neg. conj. + masc. sing. indef. art. + noun + neg. conj. + masc. sing. indef. art. + noun | 11. No es ni un gato ni un lobo. |

PATTERNS AND FORMSEXAMPLES

- | | |
|--|----------------------------|
| 12. Masc. sing. def. art. + noun | 12. El vaso |
| 13. Masc. sing. def. art. + noun +
third pers. sing. verb +
predicate adj. | 13. El libro es negro. |
| 14. Indef. masc. art. + noun + adj. | 14. Un libro blanco |
| 15. Verb + art. + noun subj. + adj. | 15. Es un sombrero blanco. |
| 16. Simple neg. construction with
pred. adj. | 16. Mi gato no es bonito. |
| 17. Adv. + adj. | 17. Muy bonito |

PART III

Sample Items From Original Program
(Items 59 - 65)

59. You will hear a familiar set of vowels. Repeat only the Spanish vowel.*
60. Your teacher will now add a consonant to the vowel which you have just repeated to form a Spanish syllable. Repeat this syllable after her.*
61. Your teacher will now contrast the Spanish syllable which you have just repeated with an English syllable. Repeat only the Spanish syllable.*
62. The syllable which you have just repeated is written es and means IS (or IT IS). Pronounce the Spanish word es; check your pronunciation with the tape.*

63.

Write the Spanish word which you hear.*

es =

is (it is)

64.

Write the Spanish sentence which you hear.*

Es mi mano. =

It is my hand.

65.

Write the Spanish sentence which you hear.*

No es mi mano. =

It is not my hand.

No always comes before the verb.

(Items 260 - 269)

260. Your teacher will pronounce two sets of syllables. Repeat only the Spanish syllables.*
261. The syllables which you repeated combine to form a Spanish word. Repeat the word after your teacher.*
262. You have just repeated the Spanish word for WHITE. It is written blanco. Pronounce it. Be sure to pronounce your "b" without a puff of air.
- Check your pronunciation with the tape.*
263. Write the Spanish word.

1.* _____

negro =

black

2.* _____

blanco =

white

264.

Write the Spanish sentence.*

Mi plato es blanco. =

My plate is white.

265.

Say in Spanish:

My glass is white.

Check your answer.*

266.

Write the Spanish sentence.*

El sombrero es blanco. =

The hat is white.

267.

Your teacher will ask you a question.*



Check your answer.*

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268.

Ask your teacher:



Is this a book or a hat?

Check your question and listen to her reply.*

269.

Write the Spanish expression.

1.* _____

un sombrero negro =

a black hat

2.* _____

un libro blanco =

a white book

In English we say A WHITE BOOK. In Spanish we say _____.

un libro blanco

In English the word WHITE comes before the word BOOK. In Spanish, the word blanco comes ... the word libro.

after

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APPENDIX B

CRITERION TESTS

PART I

Speaking *

Examiner's Instructions for Administering the Speaking Test

Part I. Vocabulary Recall

Using flash cards, the student is shown a series of pictures and must say aloud the Spanish name for each one.

1. Remarks to examiner:

- a. Student has one second for each item. If he does not begin his response within this time, proceed to the next item.
- b. Student is not required to give article with the noun.
- c. Turn on the recorder and give the number of each new item before presenting the picture.
- d. Let recorder run (i.e., do not stop after each item).

2. Directions to student:

SAY: You will see a series of pictures numbered from 1 to 10.
Say aloud the Spanish name for each object as promptly as you can.

Do you have any questions? ALL RIGHT.
Here is the first picture. One.

3. The following are the names of the objects in the pictures in the order of presentation:

- | | |
|-------------|----------|
| 1. Sombrero | 6. Oso |
| 2. Mano | 7. Queso |
| 3. Libro | 8. Lobo |
| 4. Gato | 9. Palo |
| 5. Plato | 10. Vaso |

* Student responses on all four parts of the test are tape recorded for later evaluation by native speaking judges.

Part II. Pronunciation

Using flash cards, the student is shown a series of Spanish sentences which he must read aloud.

1. Remarks to examiner:

After student reads the sentence, there should be a slight pause before showing the next flash card so that student is not reading them as a list.

2. Directions to student:

SAY: You will see a series of Spanish sentences numbered from 1 to 11. The first time you are shown these sentences, say each one to yourself, silently.

The second time you are shown these sentences, say each one out loud as accurately as you can.

3. The following are the sentences used in this section in the order of presentation.

1. Es mi vaso.
2. Mi libro es negro.
3. No es mi mano.
4. ¿Qué es esto?
5. Es mi palo.
6. ¿Es su lobo?
7. Es un queso.
8. El sombrero no es blanco.
9. Es muy bonito.
10. ¿Es blanco el gato?
11. No es ni un palo ni un plato.

Part III. Grammatical Usage

The student is presented stimuli in Spanish or English and must respond in a specified way.

1. Remarks to examiner:

- a. Make certain student understands task. Give English examples; test student's comprehension of instructions using English stimuli.
- b. Turn recorder on and record item number immediately before presenting stimulus.
- c. Repeat Spanish stimulus twice for each item.
- d. Student must make response within 20 seconds. If not, stop recorder and say, "Let's go on to the next item."
- e. Student is permitted to correct himself and change response within the 20 seconds.
- f. Stop recorder after student responds or when time has elapsed.
- g. Give directions for next item before turning on recorder.

2. Directions to student: *

- a. SAY: You will hear a Spanish sentence twice. After it is pronounced the second time, change it to the negative.

Here is an example in English:

Your teacher will say: The dog is white. The dog is white.
You say: (The dog is not white.)

Try this one in English:

Your teacher says: The pencil is yellow.
What do you say? _____
That's right. The pencil is not yellow.

Now we will do the same in Spanish. I will say a Spanish sentence twice. Change it to the negative. Any questions?

El libro es blanco.
El libro es blanco. (El libro no es blanco.)

* Items in parentheses are the correct responses students should make. The underlined portions are the aspects of grammatical usage being evaluated.

- b. I will show you a card with an English sentence.
Say in Spanish the sentence that means the same thing.
The white book is pretty (El libro blanco es bonito.)
- c. Here is another English sentence. Say the Spanish sentence
that means the same thing.
Is this the cat? (¿Es esto el gato?)
- d. SAY: You will hear a Spanish statement; then you will change the
statement to the negative.
Here is an example in English:
Your teacher says: The dog is black. The dog is black.
You say: The dog is not black.
Now listen to the Spanish statement twice and then change it
to the negative.
Es mi libro.
Es mi libro. (No es mi libro.)
- e. Here is another English sentence. Say the Spanish that
means the same thing.
It is neither a wolf nor a bear.
(No es ni un lobo ni un oso.)
- f. SAY: Your teacher will ask you a question in Spanish about your
cat. Answer it in Spanish with a complete sentence.
Remember it's your cat.
¿Es su gato?
¿Es su gato? (Sí, es mi gato.)
- g. I will show you a card with three Spanish words. SAY OUT LOUD
one complete Spanish sentence using all three words. You may
use additional Spanish words, if necessary, to make a complete
sentence. Remember, all three words must be used in one
sentence.
Bonito (El gato negro es bonito.)
Gato (El gato bonito es negro.)
Negro

- h. Here is another English sentence. Say the Spanish sentence meaning the same thing.

It is not my black plate. (No es mi plato negro.)

- i. Here are three more Spanish words. Say aloud one complete Spanish sentence using all three words. You may use additional words if necessary to make a complete sentence. Remember, all three words must be used on one sentence.

Oso (El oso blanco es bonito.)
Blanco (El oso bonito es blanco.)
Bonito

- j. Here is another English sentence. Say the Spanish sentence meaning the same thing.

Yes, it is your plate. (Si, es su plato.)

Part IV. Fluency

Using flash cards, student is shown a series of pictures and is asked to respond in Spanish to questions about the pictures. The student is evaluated on promptness, smoothness and accuracy of his response.

1. Remarks to examiner:

- a. Present Spanish stimulus once only.
- b. The student must initiate his response within 5 seconds and complete it within 15 seconds. If not, stop recorder and say, "Let's go on to the next item."
- c. Stop recorder after each item (i.e., after student response or time has elapsed).
- d. Student is permitted to correct himself and change response within the time limit of 15 seconds.

2. Directions to student: *

SAY: Your teacher will show you a series of pictures. He will then ask you a question in Spanish about each picture. Answer the question as quickly and as well as you can. Make your answer as complete

* Items in parentheses are the correct responses which student should make.

as possible; for example, if your teacher shows you a picture of a ball and says: "Is this an egg?", a complete answer would be: "No, it is not an egg. It is a ball." You will hear each question once only, so listen carefully. Any questions?

<u>Picture</u>	<u>Question</u>
1. book	¿Es un libro? (Sí, es un libro.)
2. car (black)	¿Es un auto blanco? (No, no es un auto blanco. Es un auto negro.)
3. plate	¿Es un palo o un plato? (Es un plato.)
4. cheese	¿Es un lobo o un oso? (No es ni un lobo ni un oso. Es un queso.)
5. hat	¿Es esto un sombrero? (Sí, es un sombrero.)
6. book	¿Es un plato? (No, no es un plato. Es un libro.)
7. bear	¿Es un oso? (Sí, es un oso.)
8. cheese	¿Es un palo? (No, no es un palo. Es un queso.)
9. cat (black)	¿Es un gato negro? (Sí, es un gato negro.)
10. wolf	¿Es un gato o un oso? (No es ni un gato ni un oso. Es un lobo.)
11. stick	¿Es el palo o el plato? (Es el palo.)
12. ugly cat	When I say number 12, tell in Spanish, in a complete sentence, whether the animal in the next picture is pretty or not pretty.

- | | |
|------------------|--|
| 13. bear (black) | When I say 13, in a complete Spanish sentence, tell about the color of the animal in the next picture. |
| 14. auto (black) | When I say number 14, make up any question in Spanish about the next picture. |
| 15. glass | When I say number 15, tell in Spanish that the picture is not one thing but is another. For example, if I show you a picture of a tie, you would say, "It is not a pencil. It is a tie." |

Judges Instructions for Evaluating Speaking Test

Part I. Vocabulary Recall (Total possible score, 10 points)

- A. Test of student's ability to recall and pronounce Spanish words so that they are comprehensible to native speaking Spanish persons. Answers are either right or wrong (no partial credit). 1 point per item.
- B. Although pronunciation is not being tested, to receive credit, the word must be comprehensible to a native. Since the judge knows what the student is trying to say, this may cause him to accept something as being comprehensible when it actually is not. The judge must take this into consideration and try to put himself in the place of an evaluator unfamiliar with what the student is supposed to say. For example, if student pronounces plato as playtoo, judge would not give credit for answer.
- C. If response is not made within one second, student receives no credit.
- D. Articles are not required. If student uses articles incorrectly, he is not penalized.
- E. Student responses
 - 1. sombrero
 - 2. mano
 - 3. libro
 - 4. gato
 - 5. plato
 - 6. oso
 - 7. queso
 - 8. lobo
 - 9. palo
 - 10. vaso

Part II. Pronunciation (Total possible score, 11 points)

Scoring is on degree of excellence in approximating native pronunciation.

A. Points to cover:

- (1) accent (Spanish or American pronunciation of vowels and consonant sounds);
- (2) intonation (authentic rise and fall of voice);
- (3) rhythm (does sentence flow smoothly and evenly or is pronunciation halting and unnatural, e. g., words spoken as separate units or words broken into syllables).

B. Rating

1 = like a native

1/2 = not native but adequate

0 = inadequate

C. Procedures

Using the above rating scale, each sentence should be rated three times, once each for accent, intonation and rhythm. The total number of points should be divided by three to arrive at the final score for this section.

D. Student responses

1. Es mi vaso.
2. Mi libro es negro.
3. No es mi mano.
4. ¿Qué es esto?
5. Es mi palo.
6. ¿Es su lobo?
7. Es un queso.
8. El sombrero no es blanco.
10. ¿Es blanco el gato?
11. No es ni un palo ni un plato.

Part III. Grammatical Usage (Total possible score, 20 points)

Students are evaluated on ability to handle Spanish grammar accurately.

- A. Each item is worth 2 points. Responses are either right or wrong (no partial credit).
- B. Score on underlined portions of response only (i.e., only the major grammatical points are considered and these are underlined).
- C. Do not deduct for mistakes in vocabulary, and pay no attention to pronunciation or fluency.
- D. Student has 20 seconds to complete each response from the time stimulus is presented. If student makes a mistake and corrects it within that time, he receives full credit.
- E. If student uses any English in response, he receives no credit.
- F. If student doesn't respond in a complete Spanish sentence, he receives no credit even if underlined part is correct (see 2 below).
- G. Items in parentheses are alternative responses that are also acceptable.
 - 1. El libro no es blanco. (No, el libro no es blanco.)
 - a. If student says lobo for libro or negro for blanco, loses no credit.
 - 2. El libro blanco es bonito.
 - a. If es is omitted, student receives no credit even though first three words are correct.
 - 3. ¿Es esto un gato?
 - 4. No es mi libro. (No, no es mi libro.)
 - 5. No es ni un lobo ni un oso. (No, no es ni un lobo ni un oso.)
 - 6. Sí, es mi gato.
 - 7. El gato negro es bonito. (El gato bonito es negro.)
 - 9. El oso blanco es bonito. (El oso bonito es blanco.)
 - 10. Sí, es su plato.

Part IV. Fluency (Total Possible score, 15 points)

The student is evaluated on the basis of promptness, smoothness, and accuracy of speech.

Promptness: Response must be initiated within 5 seconds from presentation of the stimulus.

Smoothness: Expression flows smoothly at characteristic rate of speed.

Accuracy: Factual correctness and grammatical correctness.
Must be a complete sentence.
(Pronunciation is not evaluated; however, if entire sentence is incomprehensible, student receives no credit.)

Items are valued at either 1/2, 1, or 1 1/2 points. The value of each item is in parentheses next to the correct response.

Items 1, 3, 5, 7, 9

Each item is worth 1/2 point. There is no partial credit.

To receive credit, the response must be prompt, smooth, and accurate.

Items 2, 4, 6, 8, 10, 11

Each item is worth 1 1/2 points. 1/2 point is given for each of the three characteristics (promptness, smoothness, and accuracy); however, if response is inaccurate, student receives no credit, even if it is prompt and smooth. Also, if response takes more than 15 seconds to complete, student receives no credit.

Items 12, 13, 14, 15

Each item is worth 1 point. Student receives no credit if response is inaccurate. 1/2 point is for accuracy. Response must be both prompt and smooth for student to earn the other 1/2 point.

Correct Responses

- | | |
|---------|--|
| (1/2) | 1. Sí. Es un libro. |
| (1 1/2) | 2. No, no es un auto blanco. Es un auto negro.
(No loss of credit for omission of first no.)* |
| (1/2) | 3. Es un plato. |
| (1 1/2) | 4. No es ni un lobo ni un oso. Es un queso.
(No loss of credit for addition of extra no. No, no es ni ...)* |

* Comment applies to other items where response is similar.

- (1/2) 5. Sí, es un sombrero.
- (1 1/2) 6. No, no es un plato. Es un libro.
(No loss of credit for omission of first no.)*
- (1/2) 7. Sí, es un oso.
- (1 1/2) 8. No, no es un palo. Es un queso.
- (1/2) 9. Sí, es un gato negro.
- (1 1/2) 10. No es ni un gato ni un oso. Es un lobo.
- (1 1/2) 11. Es el palo.
- (1) 12. El gato no es bonito.
or
No es bonito.
(Must be a complete sentence. No credit for "no bonito", etc.)
- (1) 13. Es un oso negro.
or
El oso es negro.
- (1) 14. ¿Qué es esto?
or
¿Es un auto negro?
or others
- (1) 15. No es un _____. Es un vaso.
(Any masculine noun is acceptable in blank space.)

Speaking Test Work Sheet for Use by Judges in Scoring Speaking Test

Name of Student _____

Name of Scorer _____

Date Scored _____

1. Vocabulary Recall

(1 point per item; no partial credit)

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
10. _____

Score _____

III. Grammatical Usage

(2 points per item; no partial credit)

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
10. _____

Score _____

II. *Pronunciation

IV. Fluency

	ACCENT	INTONATION	RHYTHM
1.	1 $\frac{1}{2}$ 0	1 $\frac{1}{2}$ 0	1 $\frac{1}{2}$ 0
2.	1 $\frac{1}{2}$ 0	1 $\frac{1}{2}$ 0	1 $\frac{1}{2}$ 0
3.	1 $\frac{1}{2}$ 0	1 $\frac{1}{2}$ 0	1 $\frac{1}{2}$ 0
4.	1 $\frac{1}{2}$ 0	1 $\frac{1}{2}$ 0	1 $\frac{1}{2}$ 0
5.	1 $\frac{1}{2}$ 0	1 $\frac{1}{2}$ 0	1 $\frac{1}{2}$ 0
6.	1 $\frac{1}{2}$ 0	1 $\frac{1}{2}$ 0	1 $\frac{1}{2}$ 0
7.	1 $\frac{1}{2}$ 0	1 $\frac{1}{2}$ 0	1 $\frac{1}{2}$ 0
8.	1 $\frac{1}{2}$ 0	1 $\frac{1}{2}$ 0	1 $\frac{1}{2}$ 0
9.	1 $\frac{1}{2}$ 0	1 $\frac{1}{2}$ 0	1 $\frac{1}{2}$ 0
10.	1 $\frac{1}{2}$ 0	1 $\frac{1}{2}$ 0	1 $\frac{1}{2}$ 0
11.	1 $\frac{1}{2}$ 0	1 $\frac{1}{2}$ 0	1 $\frac{1}{2}$ 0

Total points (all items, 3 ratings) _____

Score (total points + 3) _____

TOTAL SCORE

PARTS I-IV _____

- ($\frac{1}{2}$) 1.
- ($\frac{1}{2}$) 2.
- ($\frac{1}{2}$) 3.
- ($\frac{1}{2}$) 4.
- ($\frac{1}{2}$) 5.
- ($\frac{1}{2}$) 6.
- ($\frac{1}{2}$) 7.
- ($\frac{1}{2}$) 8.
- ($\frac{1}{2}$) 9.
- ($\frac{1}{2}$) 10.
- ($\frac{1}{2}$) 11.
- (1) 12.
- (1) 13.
- (1) 14.
- (1) 15.

* The judge rates each sentence three times (once each for accent, intonation, and rhythm), circling the rating assigned to each aspect of pronunciation.

Procedures for Training Judges to Evaluate Speaking Tests

Three native-speaking Spanish teachers were used to evaluate the responses of the students who participated in the final comparison between the original and revised programs. They were Patrick Herrera, Santa Monica Unified School District, William Adorno and Frederick Dominques, Beverly Hills Unified School District.

The following procedures were used in training the three judges.

1. The judges reviewed copies of "Instructions to Examiner for Administering the Speaking Test," and "Judges' Instructions for Evaluating Speaking Test." They raised questions and made comments concerning the two sets of instructions.
2. Based on the judges' suggestions, the "Judges' Instructions for Evaluating the Speaking Test" were revised.
3. Using the revised instructions as a guide, each judge independently evaluated some sample tapes. Notes were made on each problem or difficulty which was apparent during the scoring.
4. A group discussion involving all three judges and the experimenters was held in which all problems were discussed and suggestions for changes to the instructions were made.
5. A further revision of the instructions was made.
6. The judges met as a group to score sample tapes jointly. For each part of the test, each item would be played. Using the instructions as a guide, each judge would rate the student response secretly. Responses were then compared. For each item on which there was not perfect agreement, each judge would justify his rating. Agreement was reached as to how various aspects of the scoring would be handled; thus the guidelines became more concrete and uniform. The same procedure was continued, using tapes of prior students, until the three judges were in agreement about 90% of the time. A final revision of the instructions was made.
7. Using prior speaking tests of six students, each judge evaluated the tapes independently. The results of the independent evaluations indicated satisfactory inter-judge reliability (coefficient of concordance = .77, $p < .01$). The judges held further discussions concerning scoring procedures about which there was still some question. Agreement was again reached on how these aspects of the scoring would be handled.
8. The judges proceeded to independently evaluate the speaking tests from the final experimental comparison. The inter-judge reliability for this comparison was high: for the original program group (coefficient of concordance = .97, $p < .01$); for the revised program group (coefficient of concordance = .84, $p < .01$).

2

PART II

Listening Comprehension Test
Student Answer Sheet

Name _____

Date _____

Directions: For each test item on your answer sheet below, you will hear a Spanish sentence.* Circle the letter of the correct English meaning. If none are correct, circle the letter e. Each Spanish sentence will be pronounced one time. Listen to the sentence; then mark your answer sheet.

1. a. Is it your book or your cat?
b. It is your wolf and your cat.
c. It is your wolf, bear, and cat.
d. Is it your wolf or your cat?
e. none of the above
(¿Es su lobo o su gato?)
2. a. The car is pretty.
b. The car is black
c. The car is not black
d. The car is not white.
e. none of the above
(El auto no es blanco.)
3. a. Is it my hand?
b. It is not my hand.
c. It is my hand.
d. My hand is white.
e. none of the above
(Es mi mano.)
4. a. It is the bear.
b. Is it mine or yours?
c. Is this my bear?
d. Is this the wolf?
e. none of the above
(¿Es esto el oso?)
5. a. Is it a book?
b. Is it the book?
c. Is it a wolf?
d. Is it your book?
e. none of the above
(Es un libro.)
6. a. The Negro's cat is not white.
b. The black cat is not pretty.
c. Isn't the black cat pretty?
d. The black cat is very pretty.
e. none of the above
(El gato negro no es bonito.)
7. a. Is it a cat?
b. Is it my hand?
c. It is my cat.
d. It is a cat.
e. none of the above
(¿Es un gato?)
8. a. Is the glass white?
b. The glass is white.
c. My bear is white.
d. My glass is white.
e. none of the above
(Mi vaso es blanco.)
9. a. No, it is not the cheese.
b. No, it is not the glass.
c. It is not the glass.
d. No, it is not the bear.
e. none of the above
(No, no es el vaso.)
10. a. The hat is not black.
b. It is the Negro's hat.
c. Is the hat black?
d. Which hat is black?
e. none of the above
(El sombrero es negro.)

* The Spanish sentence in parentheses at the end of each item was the stimulus presented to the students by tape recorder.

11. a. Your cat is not white.
b. Your hand is not white.
c. Your cat is not pretty.
d. Your cat is very pretty.
e. none of the above
(Su gato no es bonito.)
12. a. It is not my stick. It is my car.
b. It is neither my stick nor my car.
c. It is neither my stick nor my cat.
d. It is neither your stick nor your car.
e. none of the above.
(No es ni mi palo ni mi auto.)
13. a. It is the glass.
b. It is the wolf.
c. It is the bear.
d. It is the cheese.
e. none of the above
(Es el oso.)
14. a. I see it is your cheese.
b. Yes, it is your bear.
c. Yes, it is my cheese.
d. Yes, it is your glass.
e. none of the above
(Sí, es su queso.)
15. a. Is the white plate very pretty?
b. The white stick is very pretty.
c. My white stick is very pretty.
d. Is the white cat very pretty?
e. none of the above
(El palo blanco es muy bonito.)
16. a. No, it is my stick.
b. It is not your plate.
c. No, it is my plate.
d. It is not my plate.
e. none of the above
(No es mi palo.)
17. a. My wolf is neither black nor white.
b. My book is neither black nor white.
c. My book is not black but is pretty.
d. My book is neither black nor pretty.
e. none of the above
(Mi libro no es ni negro ni bonito.)
18. a. Is it so?
b. What is this?
c. Is it the cheese?
d. What cheese is it?
e. none of the above
(¿Qué es esto?)

PART III
Reading Test
Student Answer Sheet

Name _____

Date _____

Directions: Circle the letter of the English meaning that is the same as the underlined Spanish.

1. Es mi mano.
 - a. My hand is
 - b. It is mine
 - c. This is my
 - d. It is my
 - e. none of the above
2. ¿Es un gato?
 - a. Is it the
 - b. Is a
 - c. Is your
 - d. Is it a
 - e. none of the above
3. No es mi plato.
 - a. No. It is not
 - b. No. It is
 - c. It is not
 - d. Now is
 - e. none of the above
4. Sí. Es su queso.
 - a. my cheese
 - b. a cheese
 - c. your cat
 - d. your stick
 - e. none of the above
5. Mi libro no es ni negro ni bonito.
 - a. my pretty one
 - b. nor pretty
 - c. neither pretty
 - d. nor white
 - e. none of the above
6. Es su lobo o su gato.
 - a. bear
 - b. on your
 - c. or
 - d. or your
 - e. none of the above
7. ¿Qué es esto?
 - a. What cheese is this?
 - b. What is pretty?
 - c. Is this yours?
 - d. What is this?
 - e. none of the above
8. ¿Es el libro blanco?
 - a. Is the white one the book?
 - b. Is the wolf white?
 - c. Is the book blank?
 - d. Is the book pretty?
 - e. none of the above
9. El sombrero negro es muy bonito.
 - a. His black hat is not pretty.
 - b. The black hat is very pretty.
 - c. The hat of the Negro is very pretty.
 - d. The black hat is not pretty.
 - e. none of the above
10. El gato blanco no es bonito.
 - a. The cat is not white
 - b. The white cat is no
 - c. The white cat is not
 - d. The cat is white and
 - e. none of the above

Matching

Directions: Next to each word in the left hand column, place the letter of the English word in the right hand column which means the same thing.

- | | |
|-------------------|-------------|
| _____ 1. mano | a. book |
| _____ 2. lobo | b. pail |
| _____ 3. plato | c. so |
| _____ 4. sombrero | d. platform |
| _____ 5. oso | e. stick |
| _____ 6. libro | f. hand |
| _____ 7. gato | g. black |
| _____ 8. blanco | h. sober |
| _____ 9. vaso | i. blank |
| _____ 10. queso | j. gate |
| _____ 11. auto | k. wolf |
| _____ 12. palo | l. case |
| | m. no |
| | n. plate |
| | o. hat |
| | p. white |
| | q. bear |
| | r. vase |
| | s. liberty |
| | t. cheese |
| | u. car |
| | v. glass |
| | w. cat |
| | x. man |
| | y. dog |
| | z. not |

PART IV
Writing Test
Student Answer Sheet

Name _____

Date _____

Change the following sentences to the negative.

1. Es un oso. _____
2. El gato es bonito. _____

Complete the following sentences by filling in the blanks with the appropriate Spanish words.

3. Mi libro _____ negro _____ blanco.
is neither _____ nor
4. _____ libro.
No, it is not your
5. _____ palo.
Yes, it is a
6. _____ o su gato?
Is it your wolf
7. _____ palo _____ plato.
It is neither a _____ nor a

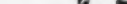
Translate the following sentences into Spanish.

8. Your white cat is very pretty. _____
9. What is this? _____
10. Is this my cheese? _____
11. It is the black hat. _____

For each picture below, there is a question about the picture.
For each question, write a complete answer in Spanish.

12.  ¿Es un libro o un plato?



13.  ¿Es un oso?



APPENDIX C
ATTITUDE QUESTIONNAIRES

PART I

Pre-training

Name _____

Boy _____ Girl _____ (Check one)

Grade _____

Date _____

Age _____

Answer the following questions as accurately as you can.

1. Have you studied Spanish before?
(Check one) Yes _____ No _____
2. If you have studied Spanish before, answer the following questions:
In what grade were you? _____
How long did you study Spanish? _____
3. If you had a chance to study Spanish next year, would you do so? (Check one)
 1. _____ No, definitely.
 2. _____ I don't think so.
 3. _____ I think so.
 4. _____ Yes, definitely.
4. How hard do you think it is to learn Spanish? (Check one)
 1. _____ Very easy
 2. _____ Fairly easy
 3. _____ Fairly hard
 4. _____ Very hard
5. If you could study either Spanish or some other language or no language at all, what would be your choice? (Check one)
 1. _____ Another language (give name: _____)
 2. _____ No language at all
 3. _____ Spanish

6. How do you think you will do in trying to learn Spanish? (Check one)

1. _____ Very poorly

2. _____ Poorly

3. _____ Well

4. _____ Very well

7. Do you think you will like or dislike the study of Spanish? (Check one)

1. _____ Like very much

2. _____ Like

3. _____ Dislike

4. _____ Dislike very much

8. Mark a check next to the statement which tells how you feel at present.

1. _____ I definitely do not plan on taking any foreign language classes in high school.

2. _____ I will take foreign language classes if I have to in order to get into college, but I wish I did not have to.

3. _____ I am not sure whether I will take any foreign language in high school.

4. _____ I plan on taking enough foreign language so that I can get into college.

5. _____ I plan on taking a foreign language every year until I graduate from high school.

9. Under each letter below, several school subjects are mentioned.

List these subjects next to the numbers provided, placing the one you like best next to number 1, second best next to number 2, and so on.

A. Social Studies, Art, Spanish,
English, Math, French

1.

2.

3.

4.

5.

6.

B. Music, Spanish, Social Studies,
Science, Physical Education

1.

2.

3.

4.

5.

6.

C. French, Art, Physical Education,
English, Math, Science

1.

2.

3.

4.

5.

6.

D. French, Social Studies, English
Physical Education, Spanish, Science

1.

2.

3.

4.

5.

6.

E. Music, Art, French,
Math, Science, Spanish

1.

2.

3.

4.

5.

6.

F. Social Studies, Art, Music, Physical
Education, English, Math, Science

1.

2.

3.

4.

5.

6.

7.

PART II

Post-Training

Name _____

Boy _____ Girl _____ (Check one)

Grade _____

Date _____

Age _____

Answer the following questions as accurately as you can.

1. If you had a chance to study Spanish next year, would you do so? (Check one)

- 1. _____ Yes, definitely
- 2. _____ I think so
- 3. _____ I don't think so
- 4. _____ No definitely

2. How hard do you think it is to learn Spanish? (Check one)

- 1. _____ Very hard
- 2. _____ Fairly hard
- 3. _____ Fairly easy
- 4. _____ Very easy

3. If you could study either Spanish or some other language or no language at all, what would be your choice? (Check one)

- 1. _____ Another language (give name: _____)
- 2. _____ No language at all
- 3. _____ Spanish

4. If you were to continue to study Spanish, how do you think you would do? (Check one)

- 1. _____ Very well
- 2. _____ Well
- 3. _____ Poorly
- 4. _____ Very poorly

5. Did you like or dislike the Spanish lessons you just finished. (Check one)

1. _____ Dislike very much
2. _____ Dislike
3. _____ Like
4. _____ Like very much

6. Mark a check next to the statement which tells how you feel at present.

1. _____ I plan on taking a foreign language every year until I graduate from high school.
2. _____ I plan on taking enough foreign language so that I can get into college.
3. _____ I am not sure whether I will take any foreign language in high school.
4. _____ I will take foreign language classes if I have to in order to get into college, but I wish I did not have to.
5. _____ I definitely do not plan on taking any foreign language classes in high school.

7. Under each letter below, several school subjects are mentioned.

List these subjects next to the numbers provided, placing the one you like best next to number 1, second best next to number 2, and so on.

A. French, Social Studies, English,
Physical Education, Spanish, Science

D. Music, Spanish, Social Studies,
Science, Physical Education

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

B. French, Art, Physical Education,
English, Math, Science

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

C. Music, Art, French, Math,
Science, Spanish

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

E. Social Studies, Art, Spanish
English, Math, French

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

F. Social Studies, Art, Music,
Physical Education, English,
Math, Science

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.

8. You have just finished some Spanish lessons. Using as many sentences as you wish, write what you think about this way of learning a foreign language.

APPENDIX D
SAMPLE ITEMS FROM FINAL PROGRAM VERSION

PART I

Track B
Unit I, Items 16-22

16. Your teacher will now say a new Spanish word 6 times.

Listen 3 times, then repeat 3 times.*

The word which you just repeated is written es. It can mean IS, IT IS, or IS IT?, depending on how it is used in a sentence. For now, when we use it in a sentence, it will always mean IT IS. (When the meaning changes, you will be told.)

17. Look at the Spanish word as you listen twice and repeat twice.*

es

18. Write the Spanish word which you hear.*

es =

It is

19. Write the Spanish sentence which you hear.*

Es mi mano. =

It is my hand.

20. Your teacher will now say a new Spanish sentence 6 times.

Listen 3 times and then repeat after your teacher 3 times.*

21. The Spanish sentence you just pronounced is written No es mi mano.
It means: It is not my hand. Notice that in Spanish NO (meaning NOT)
always comes before the verb.

Now look at the Spanish sentence as you listen twice and repeat twice.*

No es mi mano.

Copy No es mi mano twice in these blanks.

(1) _____ (2) _____

22. Write the Spanish sentence which you hear.*

No es mi mano. =

It is not my hand.

Track B
Unit V, Items 1-11

1. Here is a new word.

2. You have just repeated the Spanish word for WHITE. It is written blanco.

Look at the word as you listen and repeat.*

blanco

3. Write the Spanish word you hear.

1.* _____

negro =

black

2.* _____

blanco =

white

* Student listens 3 times and then repeats 3 times.

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4. Write the Spanish sentence you hear.*

Mi plato es blanco. =

My plate is white.

5. Say in Spanish:

My glass is white.

✓ *

6. Write the Spanish sentence you hear.*

El sombrero es blanco. =

The hat is white.

7. Answer your teacher's question.*



✓ *

8. Ask your teacher:



Is this a book or a hat?

✓ ? *

9. Here is a new Spanish expression.*

10. The expression you repeated means a black hat and is written un sombrero negro.

Look at the expression as you listen and repeat.*

un sombrero negro

Copy the above expression twice.

11. Write the Spanish expression you hear.

1.* _____

un sombrero negro =

a black hat

2.* _____

un libro blanco =

a white book

In English we say A WHITE BOOK. In Spanish we say _____.

un libro blanco

In English the word WHITE comes before the word BOOK. In Spanish the
blanco comes after the word libro. un libro blanco

Track A
Unit I, Items 16-22

16. Your teacher will now pronounce a new Spanish word. Repeat it after her.*

The word which you just repeated is written es. It can mean IS, IT IS, or IS IT?, depending on how it is used in a sentence. For now, when we use it in a sentence, it will always mean IT IS. (When the meaning changes, you will be told.)

- _____
17. Say aloud the Spanish word es.

Check your pronunciation with the tape.*

- _____
18. Write the Spanish word which you hear.*

es =

It is

- _____
19. Write the Spanish sentence which you hear.*

Es mi mano. =

It is my hand.

20. Your teacher will say a new Spanish sentence. Repeat it after her.*

21. The Spanish sentence you just pronounced is written No es mi mano.
It means It is not my hand. Notice that NO (meaning not) always
comes before the verb in Spanish.

22. Write the Spanish sentence which you hear.*

No es mi mano. =

It is not my hand.

No, (meaning not) in Spanish, always comes before the verb.

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Track A
Unit V, Items 1-9

1. Repeat this new Spanish word after your teacher.*

2. You have just repeated the Spanish word for WHITE. It is written blanco.

Say aloud: blanco.

✓ *

3. Write the Spanish word.

1.* _____

negro =

black

2.* _____

blanco =

white

4. Write the Spanish sentence.*

Mi plato es blanco. =

My plate is white.

5. Say in Spanish:

My glass is white.

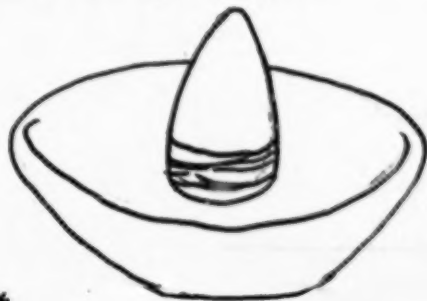
✓ *

6. Write the Spanish sentence.*

El sombrero es blanco. =

The hat is white.

7. Answer your teacher's question.*



✓ *

8. Ask your teacher:



Is this a book or a hat?

✓ ? *

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9. Write the Spanish expression.

1.*

un sombrero negro =

a black hat

2.*

un libro blanco =

a white book

In English we say A WHITE BOOK. In Spanish we say _____.

un libro blanco

In English the word WHITE comes before the word BOOK. In Spanish the word blanco comes _____ the word libro.

PART II

Diagnostic Test
Unit I, Student Answer Sheet *

Name _____

Date _____

Time _____

A. Listening Comprehension

For each Spanish sentence you hear, write the English sentence that means the same thing.

- | | |
|----|-------------------------|
| 1. | (1. Es mi mano.) |
| 2. | (2. No es mi gato.) |
| 3. | (3. ¿Es su mano?) |
| 4. | (4. No, no es mi gato.) |
| 5. | (5. ¿Es mi gato?) |

B. Speaking

For each English sentence you are shown, say aloud the Spanish sentence that means the same thing.

- | | |
|----|------------------------------|
| 1. | (1. Yes, it is my hand.) |
| 2. | (2. No, it is not your cat.) |
| 3. | (3. Is it your hand?) |
| 4. | (4. It is not my cat.) |

C. Writing

For each English sentence you are shown, write the Spanish sentence that means the same thing.

- | | |
|----|----------------------------|
| 1. | (1. Is it your hand?) |
| 2. | (2. Yes, it is my hand.) |
| 3. | (3. No, it is not my cat.) |

D. Reading

For each Spanish sentence you are shown, write the English sentence that means the same thing.

- | | |
|----|-------------------------|
| 1. | (1. No, no es mi gato.) |
| 2. | (2. ¿Es su gato?) |
| 3. | (3. No es mi mano.) |

* Items in parentheses do not appear on student answer sheet. They are the stimuli presented to the student by the examiner. A is presented to the students orally. In B, C, and D, the students are shown the stimulus sentences on flash cards.

PART III

Remedial Branches *Unit I, Review Level I (Listening Comprehension)

I. Cover column 3. In column 2, place a check next to the sentence you hear.

<u>1</u> Score	<u>2</u>	<u>3</u> **
<u>X for wrong answer</u>		
1. ____	*1. (a) () Es su gato. (b) () ¿Es su gato?	1. b.
2. ____	*2. (a) () Es mi mano. (b) () ¿Es mi mano?	2. a.
3. ____	*3. (a) () Es mi gato. (b) () ¿Es mi gato?	3. b.
4. ____	*4. (a) () Es su mano. (b) () ¿Es su mano?	4. b.
5. ____	*5. (a) () Es su gato. (b) () ¿Es su gato?	5. a.
6. ____	*6. (a) () Es mi mano. (b) () ¿Es mi mano?	6. b.

II. Cover column 3. In column 2, write the English sentence that means the same thing as each sentence you hear.*

<u>1</u> Score	<u>2</u>	<u>3</u>
<u>X for wrong answer</u>		
1. ____	*1.	1. It is not my hand.
2. ____	*2.	2. Is it your cat?
3. ____	*3.	3. No, it is not my cat.
4. ____	*4.	4. Is it my hand?
5. ____	*5.	5. It is not your hand.
6. ____	*6.	6. It is my cat.

* The remedial units are labeled "review."

** Preliminary instructions tell the student to check his answer with column 3.

Unit I, Review Level I (Speaking)

I. Cover column 3. For each sentence in column 2, say out loud the Spanish sentence that means the same thing.

<u>1</u> Score <u>X for wrong answer</u>	<u>2</u>	<u>3</u>
1. ____	1. It is your hand.	1. Es su mano.
2. ____	2. It is not your hand.	2. No es su mano.
3. ____	3. No, it is not your hand.	3. No, no es su mano.
4. ____	4. Is it your hand?	4. ¿Es su mano?
5. ____	5. Yes, it is my hand.	5. Sí, es mi mano.
6. ____	6. It is not my cat.	6. No es mi gato.
7. ____	7. No, it is not my cat.	7. No, no es mi gato.

Go back over the ones you missed!!

Unit I, Review Level I (Writing)

- I. Under each English sentence, write the Spanish that means the same thing.
Slide your mask down to check your answer.

Score
X for wrong answer

1. _____

1. It is your hand.

Es su mano.

2. _____

2. It is not your hand.

No es su mano.

3. _____

3. No, it is not your hand.

No, no es su mano.

4. _____

4. Is it your hand?

¿Es su mano?

5. _____

5. Yes, it is my hand.

Sí, es mi mano.

6. _____

6. It is not my cat.

No es mi gato.

7. _____

7. No, it is not my cat.

No, no es mi gato.

Go back over the ones you missed!!

Unit I, Review Level I (Reading)

- I. Cover column 3. For each Spanish sentence in column 2, say out loud the English sentence that means the same thing.

<u>1</u> Score <u>X for wrong answer</u>	<u>2</u>	<u>3</u>
1. ____	1. Es su mano.	1. It is your hand.
2. ____	2. No es su mano.	2. It is not your hand.
3. ____	3. No, no es su mano.	3. No, it is not your hand.
4. ____	4. ¿Es su mano?	4. Is it your hand?
5. ____	5. Sí, es mi mano.	5. Yes, it is my hand.
6. ____	6. No es mi gato.	6. It is not my cat.
7. ____	7. No, no es mi gato.	7. No, it is not my cat.

Go back over the ones you missed!!

Unit I, Review Level II (Listening Comprehension)

- I. Listen carefully. The following sentences will be given in Spanish twice.
Read the English sentence as you listen to the Spanish.

- *1. It is my hand.
- *2. It is your hand.
- *3. Is it your hand?
- *4. It is my cat.
- *5. It is your cat.
- *6. Is it your cat?
- *7. It is not my hand.
- *8. It is not my cat.
- *9. No, it is not my hand.
- *10. No, it is not my cat.

- II. Cover column 3. Your teacher will say a Spanish sentence.

Place a check (✓) next to the correct English sentence.

<u>1</u> Score	<u>2</u>	<u>3</u>
X for wrong answer		
1. ____	*1. a. () It is my hand.	b. () Is it my hand? 1. a.
2. ____	*2. a. () It is your cat.	b. () Is it your cat? 2. b.
3. ____	*3. a. () It is your hand.	b. () Is it your hand? 3. b.
4. ____	*4. a. () It is my cat.	b. () Is it my cat? 4. a.
5. ____	*5. a. () It is not your hand.	b. () No, it is not your hand. 5. a.
6. ____	*6. a. () It is not your cat.	b. () It is your cat. 6. b.
7. ____	*7. a. () It is not my hand.	b. () No, it is not my hand. 7. b.

Unit I, Review Level II (Listening Comprehension)

III. Cover column 3. In column 2, write the English sentence that means the same thing as the sentence you hear.

<u>1</u> Score <u>X for wrong answer</u>	<u>2</u>	<u>3</u>
1. ____	*1.	1. It is my cat.
2. ____	*2.	2. Is it your hand?
3. ____	*3.	3. No, it is not my cat.
4. ____	*4.	4. Yes, it is my cat.
5. ____	*5.	5. It is not my hand.
6. ____	*6.	6. Is it your cat?

Unit I, Review Level II (Speaking) *

- I. Look at each Spanish sentence you see below as your teacher pronounces it.
(Listen 2 times; then repeat 2 times.)

- *1. Es mi mano.
- *2. Es su mano.
- *3. Es mi gato.
- *4. Es su gato.
- *5. ¿Es su mano?
- *6. ¿Es su gato?
- *7. No es mi mano.
- *8. No es mi gato.
- *9. No, no es mi mano.
- *10. No, no es mi gato.

- II. Your teacher will say a Spanish sentence in the affirmative and then change it to the negative.

Repeat both sentences after your teacher.

- | | |
|-----------------|-------------------|
| *1. Es mi mano. | 1. No es mi mano. |
| *2. Es su mano. | 2. No es su mano. |
| *3. Es mi gato. | 3. No es mi gato. |
| *4. Es su gato. | 4. No es su gato. |

* The star (*) means turn on the tape.

III. Cover column 3. Change each Spanish sentence in column 2 to the negative.
Say aloud the negative sentence.

1
 Score
X for wrong answer

23

1. ____

1. Es mi gato.

1. No es mi gato.

2. ____

2. Es su gato.

2. No es su gato.

3. ____

3. Es mi mano.

3. No es mi mano.

4. ____

4. Es su mano.

4. No es su mano.

Go back over the ones you missed!!

IV. Change each Spanish statement in column 2 to a question.
Say aloud the question. Then check your answer with the tape.

1
 Score
X for wrong answer

2

1. ____

1. Es mi mano.

✓ *

2. ____

2. Es su mano.

✓ *

3. ____

3. Es mi gato.

✓ *

4. ____

4. Es su gato.

✓ *

V. Look at each picture and the question about the picture.

Say aloud a complete answer in Spanish. Lower your mask to check your answer.

Score
X for wrong answer

1. _____ 1.



¿Es su gato?

Sí, es mi gato.

2. _____ 2.



¿Es su mano?

Sí, es mi mano.

3. _____ 3.



¿Es su mano?

No, no es mi mano. Es mi gato.

4. _____ 4.



¿Es su gato?

No, no es mi gato. Es mi mano.

Go back over the ones you missed!!

Unit I, Review Level II (Writing)

- I. Cover column 2. For each sentence in column 1, say aloud the meaning in English. In column 3, copy the Spanish sentence in column 1.

<u>1</u>	<u>2</u>	<u>3</u>
1. Es mi mano.	1. It is my hand.	1.
2. Es su mano.	2. It is your hand.	2.
3. ¿Es mi gato?	4. Is it my cat?	3.
4. ¿Es su gato?	4. Is it your cat?	4.
5. No es mi mano.	5. It is not my hand.	5.
6. No, no es mi mano.	6. No, it's not my hand.	6.
7. No, no es su gato.	7. No, it's not your cat.	7.

- II. Cover column 4. In column 3, write the Spanish sentence which means the same as each sentence in column 2.

<u>1</u> Score	<u>2</u>	<u>3</u>	<u>4</u>
X for wrong answer			
1. ____	1. It is my hand.	1.	1. Es mi mano.
2. ____	2. It is your hand.	2.	2. Es su mano.
3. ____	3. Is it my cat?	3.	3. ¿Es mi gato?
4. ____	4. Is it your cat?	4.	4. ¿Es su gato?
5. ____	5. It is not my hand.	5.	5. No es mi mano.
6. ____	6. No, it's not my hand.	6.	6. No, no es mi mano.
7. ____	7. No, it's not your cat.	7.	7. No, no es su gato.

Go back over the ones you missed!!

III. Look at each picture and question. Write a complete answer in Spanish. Slide your mask down to check your answer.

Score
X for wrong answer

1. _____ 1.



¿Es su gato?

Sí, es mi gato.

2. _____ 2.



¿Es su mano?

Sí, es mi mano.

3. _____ 3.



¿Es su mano?

No, no es mi mano. Es mi gato.

4. _____ 4.



¿Es su gato?

No, no es mi gato. Es mi mano.

Go back over the ones you missed!!

IV. Under each English sentence, write the Spanish that means the same thing.
Lower your mask to check your answer.

Score
X for wrong answer

1. ____

1. It is my cat.

Es mi gato.

2. ____

2. Is it your hand?

¿Es su mano?

3. ____

3. No, it is not my cat.

No, no es mi gato.

4. ____

4. Yes, it is my cat.

Sí, es mi gato.

5. ____

5. It is not my hand.

No es mi mano.

6. ____

6. Is it your cat?

¿Es su gato?

Go back over the ones you missed!!

Unit I, Review Level II (Reading)

- I. Cover column 3. For each Spanish sentence in column 2, say out loud the English sentence that means the same thing.

1
Score
X for wrong answer

23

1. ____
2. ____
3. ____
4. ____
5. ____
6. ____
7. ____
8. ____
9. ____
10. ____

1. Es mi mano.
2. Es su mano.
3. Es mi gato.
4. Es su gato.
5. ¿Es su mano?
6. ¿Es su gato?
7. No es mi mano.
8. No es mi gato.
9. No, no es mi mano.
10. No, no es mi gato.

1. It is my hand.
2. It is your hand.
3. It is my cat.
4. It is your cat.
5. Is it your hand?
6. Is it your cat?
7. It is not my hand.
8. It is not my cat.
9. No, it is not my hand.
10. No, it is not my cat.

- II. Cover column 3. For each Spanish sentence in column 2, say out loud the English sentence that means the same thing.

1
Score
X for wrong answer

23

1. ____
2. ____
3. ____
4. ____
5. ____
6. ____

1. Es mi gato.
2. ¿Es su mano?
3. No, no es mi gato.
4. Sí, es mi gato.
5. No es su mano.
6. ¿Es su gato?

1. It is my cat.
2. Is it your hand?
3. No, it is not my cat.
4. Yes, it is my cat.
5. It is not your hand.
6. Is it your cat?

Go back over the ones you missed!!

APPENDIX E

RESULTS OF FINAL EXPERIMENTAL COMPARISON (RAW SCORES)

	Revised Program Subjects								
	JB	JD	SF	BH	GH	LL	ML	SP	JS
Grade Point Average ¹ (Eng., Soc. Studies, Math)	3.0	2.7	2.0	2.7	2.3	3.3	3.0	1.3	2.0
Scholastic Aptitude-Lang. ^{2*}	6	8	8	7	6	7	9	6	7
Scholastic Aptitude-Non-lang. ³	6	9	9	9	6	7	9	4	-
Spanish Pre-test (max=139)	4	27	99	11	1	49	43	2	7
Listening (max=54)	33	36	54	42	39	42	39	33	42
Reading (max=48)	48	48	48	45	48	48	45	47	48
Writing (max=39)	35	39	32	33	35	33	35	29	36
Speaking (max=56)	46	51	54	41	41	50	51	35	49
Total All Tests (max=197)	162	174	188	161	163	173	170	144	175
Speaking Sub-tests									
Vocab. recall (max=10)	9	10	10	10	10	10	10	10	10
Pronunciation (max=11)	7	10	9	7	6	10	9	7	11
Gram. Usage (max=20)	20	18	20	16	12	16	18	10	18
Fluency (max=15)	10	13	15	9	13	14	14	8	10
Time (No. minutes to complete prog.)	274	225	194	230	319	168	249	394	317

¹ GPA calculated on system A=4; B=3; C=2; D=1; F=0

² California Test of Mental Maturity (CTMM) reported in stanines (language part)

³ California Test of Mental Maturity (CTMM) reported in stanines (non-language part)

* Henmon-Nelson Test of Mental Ability. (This is a composite language and non-language test. Since greater emphasis is on language, it is averaged in with the language part of the CTMM scores.)

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Original Program Subjects

	SB	AD	MA	JG	DN	KN	CR	LA	SS	CS
Grade Point Average ¹ (Eng., Soc. Studies, Math)	3.0	2.7	4.0	2.0	1.3	3.0	3.3	2.3	2.3	2.7
Scholastic Aptitude-Lang. ^{2*}	9	9	9	7	6	4	9	7	6	7
Scholastic Aptitude-Non- lang. ³	9	9	-	8	5	5	9	8	5	8
Spanish Pre-test (max=139)	0	62	17	3	2	3	108	20	0	21
Listening (max=54)	33	42	42	36	18	9	45	30	27	30
Reading (max=48)	33	48	45	45	21	20	48	42	36	42
Writing (max=39)	6	31	27	20	6	8	36	9	20	22
Speaking (max=56)	19	51	43	33	16	20	53	40	22	30
Total All Tests (max=197)	91	172	157	134	61	57	182	121	105	124
Speaking Sub-tests										
Vocab. recall (max=10)	6	10	10	9	5	6	9	10	10	9
Pronunciation (max=11)	3	7	7	6	3	4	9	6	4	6
Gram. Usage (max=20)	4	20	14	10	4	6	20	12	2	9
Fluency (max=15)	6	14	12	8	4	4	15	12	6	6
Time (No. minutes to complete prog.)	137	140	150	244	208	217	120	180	202	202

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APPENDIX F

STUDENT REACTIONS TO PROGRAMMED LEARNING EXPERIENCE

Presented below are the verbatim student responses to the following open-ended question posed on the post-training attitude questionnaire (17 out of 19 students completing the program responded to this question; the others left it blank):

"You have just finished some Spanish lessons. Using as many sentences as you wish, write what you think about this way of learning a foreign language."

Revised Program

1. JS
This is wonderful! I missed the "Winnetka School System" but I can't anymore. This is it!!
2. SP
I think it is a very nice way to teach children Spanish.
3. ML
I think this way of learning a foreign language is a lot of fun. It only seems like about 10 minutes instead of an hour. I think it's interesting and fun the way you flip a switch and listen to a recording and then repeat after it.
4. LL
I found this way very easy. It was also fun and entertaining. I wouldn't mind taking Spanish this way anytime at all. I hope I can in the future.
5. GE
I think this is very new & better way of teacher. I think that it teaches us a lot faster some of the Spanish words, colors and etc. This is a lot better than T.V. Spanish. Here you remember a lot more than on T.V.
6. BH
it is very pretty
es muy bonito
es mi
7. SF
I think it quite excellent for teaching, but a bit more color might be annexed to the present program.
8. JB
I think that I have learned quite a bit of Spanish with this method of learning. I like it very much.
9. JD
I think that this program was excellent. I found that in a short period of time I was able to use spanish in sentences.

Original Program

1. AD
I think this way of learning a foreign is fun. It is fun working with the tape recorders. I think I would learn more this way than with a teacher.
2. MD
I liked this Spanish course a whole lot because it is fun because you learn at your own rate, you have a good feeling when you know you have actually learned something. I think that there should be some way in which you could turn the machine back yourself when you want something repeated in case it went too fast. Also, it went a little too slow in the single words and small sentences, and much too fast on the very long sentences. I would not mind taking every language there is if we could learn on this type of machine. I know at least three other people, who like myself, looked forward coming here every day.
3. JG
I think that this new idea is great you can learn a lot more and you don't waste time talking to other people.
4. DG
I think this way of teach spanish is very good. When I had it in 6th grade she didn't teach me as much as I have learned here.
5. NK
I think this is the second best way to learn Spanish. It is a good way.
6. LS
I think this way of learning a foreign language is quiet educational. I enjoy these lessons. It is a new and modern way. It is not as boring as the other way of teaching, as a teacher.
7. SS
I think It's very fun to learn and I think I will continue learning Spanish.
8. CS
I like it.